INDEX OF AUTHORS

Aldridge, H. D. J. N. *See* RAYNER and ALDRIDGE

Alexander, R. McN. The maximum forces exerted by animals **115**, 231

Anctil, Michel. Cholinergic and monoaminergic mechanisms associated with control of bioluminescence in the ctenophore *Mnemiopsis leidyi* **119**, 225

Anderson, Hilary. *See* BACON and ANDERSON

Anderson, John G. T. *See* HEPPNER and ANDERSON

Andreasen, Peter. Free and total calcium concentrations in the blood of rainbow trout, *Salmo gairdneri*, during 'stress' conditions **118**, 111

Armstrong, R. B. and Laughlin, M. H. Metabolic indicators of fibre recruitment in mammalian muscles during locomotion **115**, 201

Asai, Hiroshi. *See* HARA, ASAI and NAITOH

Augustine, George J. *See* WATSON, HOSHI, COLBURNE and AUGUSTINE

Augustine, George J. and Fetterer, Raymond H. Neurohormonal modulation of the *Limulus* heart: amine actions on cardiac ganglion neurones **118**, 53

Azuma, Akira, Azuma, Soichi, Watanabe, Isao and Furuta, Toyohiko. Flight mechanics of a dragonfly **116**, 79

Azuma, Soichi. *See* AZUMA, AZUMA, WATANABE and FURUTA

Bacon, Jonathan and Anderson, Hilary. Developmental determination of central connections of sensory neurones from wind-sensitive hairs in the locust, *Schistocerca gregaria* **114**, 679

Baguet, F. *See* MALLEFET and BAGUET

Barber, Andrew and ten Bruggencate, Gerrit. Extracellular changes in ion concentrations induced by acetylcholine in the salivary glands of the pond snail *Planorbis corneus* **118**, 427

Barnas, G. M. *See* GLEESON, BARNAS and RAUTENBERG

Barnas, G. M. and Burger, R. E. Intrapulmonary chemoreceptor control of ventilatory movements in the self-ventilating chicken **114**, 121

Barnas, G. M., Gleeson, M. and Rautenberg, W. Respiratory and cardiovascular responses of the exercising chicken to spinal cord cooling at different ambient temperatures. I. Cardiovascular responses and blood gases **114**, 415

Barrett, D. J. and Taylor, E. W. Spontaneous efferent activity in branches of the vagus nerve controlling ventilation and heart rate in the dogfish **117**, 433

—The location of cardiac vagal preganglionic neurones in the brain stem of the dogfish *Scyliorhinus canicula* **117**, 449

—The characteristics of cardiac vagal preganglionic motoneurones in the dogfish **117**, 459

Bartholomew, George A. and Lighton, John R. B. Ventilation and oxygen consumption during rest and locomotion in a tropical cockroach, *Blaberus giganteus* **118**, 449

Bässler, U. *See* HOFMANN, KOCH and BÄSSLER

Bässler, Ulrich, Foth, Eva and Breutel, Gerhard. The inherent walking direction differs for the prothoracic and metathoracic legs of stick insects **116**, 301

Bech, C., Rautenberg, W. and May, B. Ventilatory oxygen extraction during cold exposure in the pigeon (*Columba livia*) **116**, 499

Beitinger, Thomas L. *See* PETTIT and BEITINGER

Bennett, A. F. *See* SEYMOUR, BENNETT and BRADFORD

Bennett, Albert F. Temperature and muscle **115**, 333

Bennett, A. F., Seymour, R. S., Bradford, D. F. and Webb, G. J. W. Mass dependence of anaerobic metabolism and acid-base disturbance during activity in the salt-water crocodile, *Crocodylus porosus* **118**, 161

Berridge, M. J. *See* HESLOP, IRVINE, TASHJIAN and BERRIDGE

Bertocci, Loren, A. *See* GOLLNICK, RIEDY, QUINTINSKIE and BERTOCCI

Bodine, Sue C. *See* EDGERTON, MARTIN, BODINE and ROY

Bolt, Stephen R. L. Urine clearance rates and apparent permeability of *Gammarus duebeni* exposed to varying conditions **114**, 673

Booth, Charles E. and McMahon, Brian R. Lactate dynamics during locomotor activity in the blue crab, *Callinectes sapidus* **118**, 461

Boutilier, R. G. *See* GLASS, BOUTILIER and HEISLER

Boyes, Bruce. *See* DOW, HARVEY, WOLFERSBERGER and BOYES

Boyle, P. R. *See* DUBAS and BOYLE

Brackenbury, J. H. and El-Sayed, M. S. Comparison of running energetics in male and female domestic fowl **117**, 349

Bradford, D. F. *See* BENNETT, SEYMOUR, BRADFORD and WEBB

—*See also* SEYMOUR, BENNETT and BRADFORD

Brandwood, A. Mechanical properties and factors of safety of spider drag-lines **116**, 141

Bräunig, Peter. Strand receptors associated with the femoral chordotonal organs of locust legs **116**, 331

Breutel, Gerhard. *See* BÄSSLER, FOTH and BREUTEL

Bridges, C. R. *See* MORRIS and BRIDGES

Bryant, S. H. *See* CONTE-CAMERINO, BRYANT, LOGRANO and MAMBRINI

Buchmann, Stephen L. *See* COOPER, SCHAFFER and BUCHMANN

Burger, R. E. *See* BARNAS and BURGER
Burggren, Warren W. *See* WHEATLY, MCMAHON, BURGGREN and PINDER
Burggren, Warren, Pinder, Alan, McMahon, Brian, Wheatly, Michele and Doyle, Michael. Ventilation, circulation and their interactions in the land crab, *Cardisoma guanhumi* **117**, 133
Burrows, M. *See* HALE and BURROWS
Burton, D. Differential *in vivo* sensitivity of melanophores and xanthophores to catecholamines in winter flounder (*Pseudopleuronectes americanus* Walbaum) integumentary patterns **114**, 649
Byrne, Maria. The mechanical properties of the autotomy tissues of the holothurian *Eupentacta quinquesemita* and the effects of certain physico-chemical agents **117**, 69

Callec, J. J. *See* SATTELLE, HARROW, DAVID, PELHATE, CALLEC, GEPNER and HALL
Cameron, James N. Compensation of hypercapnic acidosis in the aquatic blue crab, *Callinectes sapidus*: the predominance of external sea water over carapace carbonate and the proton sink **114**, 197
—The bone compartment in a teleost fish, *Ictalurus punctatus*: size, composition and acid-base response to hypercapnia **117**, 307
—Post-moult calcification in the blue crab (*Callinectes sapidus*): relationships between apparent net H^+ excretion, calcium and bicarbonate **119**, 275
—*See also* WOOD and CAMERON
Cameron, James N. and Wood, Chris M. Apparent H^+ excretion and CO_2 dynamics accompanying carapace mineralization in the blue crab (*Callinectes sapidus*) following moulting **114**, 181
Carpenter, Roger E. Flight physiology of flying foxes, *Pteropus poliocephalus* **114**, 619
Casey, Timothy M., May, Michael L. and Morgan, Kenneth R. Flight energetics of euglossine bees in relation to morphology and wing stroke frequency **116**, 271
Cavagna G. A., Mazzanti, M., Heglund, N. C. and Citterio, G. Storage and release of mechanical energy by active muscle: a non-elastic mechanism? **115**, 79
Cavagna, Giovanni A. *See* HEGLUND and CAVAGNA
Citterio, G. *See* CAVAGNA, MAZZANTI, HEGLUND and CITTERIO
Cohen, Avis H. *See* HARRIS-WARRICK and COHEN
Colburne, John. *See* WATSON, HOSHI, COLBURNE and AUGUSTINE
Conte-Camerino, Diana, Bryant, S. H., Lograno, M. D. and Mambrini, M. The influence of inactivity on membrane resting conductances of rat skeletal muscle fibres undergoing reinnervation **115**, 99
Cook, Anthony. *See* HAGAN and COOK
Cooke, Ian M. Electrophysiological characterization of peptidergic neurosecretory terminals **118**, 1
Cooke, Ian R. C. Further studies of crayfish escape behaviour. II. Giant axon-mediated neural activity in the appendages **118**, 367
Cooke, Ian R. C. and Macmillan, David L. Further studies of crayfish escape behaviour. I. The role of the appendages and the stereotyped nature of non-giant escape swimming **118**, 351
Cooper, Paul D., Schaffer, William M. and Buchmann, Stephen L. Temperature regulation of honey bees (*Apis mellifera*) foraging in the Sonoran desert **114**, 1
Cossins, A. R. *See* GIBSON, ELLORY and COSSINS
Cossins, A. R. and Richardson, P. A. Adrenalin-induced Na^+/H^+ exchange in trout erythrocytes and its effect upon oxygen-carrying capacity **118**, 229
Croll, Roger P. Sensory control of respiratory pumping in *Aplysia californica* **117**, 15
Cruse, H. Coactivating influences between neighbouring legs in walking insects **114**, 513
—Which parameters control the leg movement of a walking insect? I. Velocity control during the stance phase **116**, 343
—Which parameters control the leg movement of a walking insect? II. The start of the swing phase **116**, 357

Dainton, Barbara H. and Wright, Jonathan. Falling temperature stimulates activity in the slug *Arion ater* **118**, 439
Dale, Brian. Sperm receptivity in sea urchin oocytes and eggs **118**, 85
Daniel, Thomas L. Cost of locomotion: unsteady medusan swimming **119**, 149
David, J. A. *See* SATTELLE, HARROW, DAVID, PELHATE, CALLEC, GEPNER and HALL
Davids, Cornelis. *See* DIMOCK and DAVIDS
Daxboeck, C. *See* PERRY, DAXBOECK and DOBSON
Debski, Elizabeth A. and Friesen, W. Otto. Habituation of swimming activity in the medicinal leech **116**, 169
De Luca, Carlo J. Control properties of motor units **115**, 125
DeVries, Arthur L. *See* TURNER, SCHRAG and DEVRIES
Dimitracos, S. A. and Tsacopoulos, M. The recovery from a transient inhibition of the oxidative metabolism of the photoreceptors of the drone (*Apis mellifera* ♂) **119**, 165
Dimock, Ronald V., Jr and Davids, Cornelis. Spectral sensitivity and photo-behaviour of the water mite genus *Unionicola* **119**, 349
di Prampero, P. E. Metabolic and circulatory limitations to $\dot{V}_{O_2}$max at the whole animal level **115**, 319
Dobson, G. P. *See* PERRY, DAXBOECK and DOBSON
Doherty, John A. Temperature coupling and 'trade-off' phenomena in the acoustic communication system of the cricket, *Gryllus bimaculatus* de Geer (Gryllidae) **114**, 17
Dominick, Oliver S. and Truman, James W. The physiology of wandering behaviour in *Manduca sexta*. II. The endocrine control of wandering behaviour **117**, 45

Doujack, F. E. Can a shore crab see a star? **116**, 385
Dow, Julian A. T., Harvey, William R., Wolfersberger, Michael G. and Boyes, Bruce. An improved chamber for the short-circuiting of epithelia **114**, 685
Doyle, Michael. *See* BURGGREN, PINDER, MCMAHON, WHEATLY and DOYLE
Driedzic, W. R. *See* FARRELL, WOOD, HART and DRIEDZIC
Driedzic, William R. Contractile performance of cephalopod hearts under anoxic conditions **117**, 471
—*See also* JOHNSTON, SIDELL and DRIEDZIC
Drost, M. R. *See* MULLER, VAN LEEUWEN, OSSE and DROST
Dubas, F. and Boyle, P. R. Chromatophore motor units in *Eledone cirrhosa* (Cephalopoda: Octopoda) **117**, 415
Dudley, Gary A. *See* TERJUNG, DUDLEY and MEYER
Duthie, G. G. *See* SMITH, DUTHIE, WELLS and HOULIHAN

Eddy, F. B. Uptake and loss of potassium by rainbow trout (*Salmo gairdneri*) in fresh water and dilute sea water **118**, 277
—*See also* POTTS, TALBOT and EDDY
Edgerton, V. Reggie, Martin, Thomas P., Bodine, Sue C. and Roy, Roland R. How flexible is the neural control of muscle properties? **115**, 393
Eisenberg, Brenda R. Adaptability of ultra-structure in the mammalian muscle **115**, 55
Ellington, C. P. Power and efficiency of insect flight muscle **115**, 293
Ellory, J. C. *See* GIBSON, ELLORY and COSSINS
El-Sayed, M. S. *See* BRACKENBURY and EL-SAYED
Epstein, S. *See* GRAHAM and EPSTEIN
Eriksson, Britt-Marie. *See* SMITH, NILSSON, WAHLQVIST and ERIKSSON
Eriksson, E. Sture. Attack behaviour and distance perception in the Australian bulldog ant *Myrmecia nigriceps* **119**, 115
Evans, David H. and Kormanik, Gregg A. Urea efflux from the *Squalus acanthias* pup: the effect of stress **119**, 375
Evers, H. P. *See* PETERS and EVERS
Ewing, Arthur W. *See* MIYAN and EWING

Farrell, A. P. A protective effect of adrenalin on the acidotic teleost heart **116**, 503
Farrell, A. P., Wood, S., Hart, T. and Driedzic, W. R. Myocardial oxygen consumption in the sea raven, *Hemitripterus americanus*: the effects of volume loading, pressure loading and progressive hypoxia **117**, 237
Farrell, Anthony. *See* GRAHAM and FARRELL
Fetterer, Raymond H. *See* AUGUSTINE and FETTERER
Flik, Gert, van Rijs, Jeanne H. and Wendelaar Bonga, Sjoerd E. Evidence for high-affinity Ca^{2+}-ATPase activity and ATP-driven Ca^{2+}-transport in membrane preparations of the gill epithelium of the cichlid fish *Oreochromis mossambicus* **119**, 335
Foth, Eva. *See* BÄSSLER, FOTH and BREUTEL
Friesen, W. Otto. *See* DEBSKI and FRIESEN
Furuta, Toyohiko. *See* AZUMA, AZUMA, WATANABE and FURUTA

Gabriel, Julie M. The development of the locust jumping system. I. Allometric growth and its effect on jumping performance **118**, 313
—The development of the locust jumping system. II. Energy storage and muscle mechanics **118**, 327
Gepner, J.I. *See* SATTELLE, HARROW, DAVID, PELHATE, CALLEC, GEPNER and HALL
Gibson, J. S., Ellory, J. C. and Cossins, A. R. Temperature acclimation of intestinal Na transport in the carp (*Cyprinus carpio* L.) **114**, 355
Giordana, B. *See* PARENTI, GIORDANA, SACCHI, HANOZET and GUERRITORE
Glass, M. L., Boutilier, R. G. and Heisler, N. Effects of body temperature on respiration, blood gases and acid-base status in the turtle *Chrysemys picta bellii* **114**, 37
Gleeson, M. Analysis of respiratory pattern during panting in fowl, *Gallus domesticus* **116**, 487
—*See also* BARNAS, GLEESON and RAUTENBERG
Gleeson, M., Barnas, G. M. and Rautenberg, W. Respiratory and cardiovascular responses of the exercising chicken to spinal cord cooling at different ambient temperatures. II. Respiratory responses **114**, 427
Goldspink, G. *See* LOUGHNA and GOLDSPINK
Goldspink, Geoffrey. Malleability of the motor system: a comparative approach **115**, 375
Gollnick, Philip D., Riedy, Mark, Quintinskie, John J. and Bertocci, Loren A. Differences in metabolic potential of skeletal muscle fibres and their significance for metabolic control **115**, 191
Gosline, John M. *See* SHADWICK and GOSLINE
Graham, D. Influence of coxa-thorax joint receptors on retractor motor output during walking in *Carausius morosus* **114**, 131
Graham, D. and Epstein, S. Behaviour and motor output for an insect walking on a slippery surface. II. Backward walking **118**, 287
Graham, Mark and Farrell, Anthony. The seasonal intrinsic cardiac performance of a marine teleost **118**, 173
Guerritore, A. *See* PARENTI, GIORDANA, SACCHI, HANOZET and GUERRITORE
Guidarini, Dante. *See* IOALE' and GUIDARINI

Hagan, Stephen and Cook, Anthony. Modifications to a controlled environment cabinet to gain proportional control over temperature and humidity **118**, 423
Hale, J. P. and Burrows, M. Innervation patterns of inhibitory motor neurones in the thorax of the locust **117**, 401
Hall, L. M. *See* SATTELLE, HARROW, DAVID, PELHATE, CALLEC, GEPNER and HALL
Hammelsbeck, M. *See* RATHMAYER and HAMMELSBECK
Hanozet, G. M. *See* PARENTI, GIORDANA, SACCHI, HANOZET and GUERRITORE

Hanrahan, J. W. and Phillips, J. E. Further observations on the regulation of KCl absorption across locust rectum **116**, 153
Hara, Ritsuo, Asai, Hiroshi and Naitoh, Yutaka. Electrical responses of the carnivorous ciliate *Didinium nasutum* in relation to discharge of the extrusive organelles **119**, 211
Harrison, Paul. *See* JOHNSTON and HARRISON
Harris-Warrick, Ronald M. and Cohen, Avis H. Serotonin modulates the central pattern generator for locomotion in the isolated lamprey spinal cord **116**, 27
Harrow, I. D. *See* SATTELLE, HARROW, DAVID, PELHATE, CALLEC, GEPNER and HALL
Hart, T. See FARRELL, WOOD, HART and DRIEDZIC
Harvey, William R. *See* DOW, HARVEY, WOLFERSBERGER and BOYES
Heglund, N. C. *See* CAVAGNA, MAZZANTI, HEGLUND and CITTERIO
Heglund, Norman C. and Cavagna, Giovanni A. Efficiency of vertebrate locomotory muscles **115**, 283
Heisler, N. *See* GLASS, BOUTILIER and HEISLER
Heitler, W. J. Motor programme switching in the crayfish swimmeret system **114**, 521
Heitler, William J. *See* SILLAR and HEITLER
Henneman, Elwood. The size principle: a deterministic output emerges from a set of probabilistic connections **115**, 105
Heppner, Frank H. and Anderson, John G. T. Leg thrust important in flight take-off in the pigeon **114**, 285
Heslop, J. P., Irvine, R. F., Tashjian, A. H. and Berridge, M. J. Inositol tetra- and pentakisphosphate in GH_4 cells **119**, 395
Hess, Stephen D. and Prior, David J. Locomotor activity of the terrestrial slug, *Limax maximus*: response to progressive dehydration **116**, 323
Hildebrand, Eilo. *See* WEHNER and HILDEBRAND
Hisada, M. *See* TAKAHATA, YOSHINO and HISADA
Hochachka, P. W. Fuels and pathways as designed systems for support of muscle work **115**, 149
Hofmann, T. and Koch, U. T. Acceleration receptors in the femoral chordotonal organ of the stick insect, *Cuniculina impigra* **114**, 225
Hofmann, T., Koch, U. T. and Bässler, U. Physiology of the femoral chordotonal organ of the stick insect, *Cuniculina impigra* **114**, 207
Hoppeler, H. and Lindstedt, S. L. Malleability of skeletal muscle in overcoming limitations: structural elements **115**, 355
Hoshi, Toshinori. *See* WATSON, HOSHI, COLBURNE and AUGUSTINE
Houlihan, D. F. *See* SMITH, DUTHIE, WELLS and HOULIHAN
Howald, H. Malleability of the motor system: training for maximizing power output **115**, 365
Hudlická, O. Development and adaptability of microvasculature in skeletal muscle **115**, 215
Hustert, R. Multisegmental integration and divergence of afferent information from single tactile hairs in a cricket **118**, 209
Huxley, H. E. The crossbridge mechanism of muscular contraction and its implications **115**, 17
Hylander, William L. *See* SMITH and HYLANDER

Ioale', Paolo and Guidarini, Dante. Methods for producing disturbances in pigeon homing behaviour by oscillating magnetic fields **116**, 109
Irvine, R. F. *See* HELSOP, IRVINE, TASHJIAN and BERRIDGE
Ishijima, Sumio and Mohri, Hideo. A quantitative description of flagellar movement in golden hamster spermatoza **114**, 463
Itazawa, Yasuo. *See* OIKAWA and ITAZAWA

Jackson, Donald C. *See* SILVER and JACKSON
Johnsrude, C. L. and Webb, P. W. Mechanical properties of the myotomal musculo-skeletal system of rainbow trout, *Salmo gairdneri* **119**, 71
Johnston, Ian A. Sustained force development: specializations and variations among vertebrates **115**, 239
Johnston, Ian A. and Harrison, Paul. Contractile and metabolic characteristics of muscle fibres from Antarctic fish **116**, 223
Johnston, Ian A., Sidell, Bruce D. and Driedzic, William R. Force-velocity characteristics and metabolism of carp muscle fibres following temperature acclimation **119**, 239
Jones, David R. *See* MILSOM and JONES
Josephson, Robert K. Mechanical power output from striated muscle during cyclic contraction **114**, 493
—The mechanical power output of a tettigoniid wing muscle during singing and flight **117**, 357
Josephson, Robert K. and Young, David. A synchronous insect muscle with an operating frequency greater than 500 Hz **118**, 185

Kamermans, Pauline. *See* VIDELER and KAMERMANS
Kerfoot, P. A. H., Mackie, G. O., Meech, R. W., Roberts, Alan and Singla, C. L. Neuromuscular transmission in the jellyfish *Aglantha digitale* **116**, 1
Kier, William M., Messenger, John B. and Miyan, Jaleel A. Mechanoreceptors in the fins of the cuttlefish, *Sepia officinalis* **119**, 369
Kirmse, Wolfgang. Visual position information controlling smooth-tracking in the praying mantis **119**, 365
Klein, M. G. Properties of the chloride conductance associated with temperature acclimation in muscle fibres of green sunfish **114**, 581
Klein, M. G. and Prosser, C. L. The effects of temperature acclimation on the resting membrane of skeletal muscle fibres from green sunfish **114**, 563
Koch, U. T. *See* HOFMANN and KOCH
—*See also* HOFMANN, KOCH and BÄSSLER

Kormanik, Gregg A. *See* EVANS and KORMANIK
Kozubowski, Mark M. *See* SMITS and KOZUBOWSKI
Kramer, Bernd. Jamming avoidance in the electric fish *Eigenmannia*: harmonic analysis of sexually dimorphic waves **119**, 41
Kushmerick, Martin J. Patterns in mammalian muscle energetics **115**, 165

LaBarbera, Michael. *See* SATTERLIE, SPENCER and LABARBERA
Lampert, G. J. *See* MACHIN and LAMPERT
—*See also* MACHIN, LAMPERT and O'DONNELL
Land, M. F. Fields of view of the eyes of primitive jumping spiders **119**, 381
Laughlin, M. H. *See* ARMSTRONG and LAUGHLIN
Levitan, Herbert. *See* ZEČEVIĆ, LEVITAN and PAŠIĆ
Lighton, John R. B. *See* BARTHOLOMEW and LIGHTON
Lindstedt, S. L. *See* HOPPELER and LINDSTEDT
Linehan, Catherine M. Characterization of the cold-induced contracture of the anterior byssal retractor muscle of *Mytilus edulis* **119**, 133
Loeb, Gerald E. Motoneurone task groups: coping with kinematic heterogeneity **115**, 137
Lograno, M. D. *See* CONTE-CAMERINO, BRYANT, LOGRANO and MAMBRINI
Loughna, P. T. and Goldspink, G. Muscle protein synthesis rates during temperature acclimation in a eurythermal (*Cyprinus carpio*) and a stenothermal (*Salmo gairdneri*) species of teleost **118**, 267
Lowrie, M. *See* VRBOVÁ, NAVARRETE and LOWRIE

Macdonald, J. A. *See* MONTGOMERY and MACDONALD
Machin, J. and Lampert, G. J. A passive two layer permeability-water content model for *Periplaneta* cuticle **117**, 171
Machin, J., Lampert, G. J. and O'Donnell, M. J. Component permeabilities and water contents in *Periplaneta* integument: role of the epidermis re-examined **117**, 155
Mackie, G. O. *See* KERFOOT, MACKIE, MEECH, ROBERTS and SINGLA
McMahon, Brian. *See* BOOTH and MCMAHON
—*See also* BURGGREN, PINDER, MCMAHON, WHEATLY and DOYLE
—*See also* WHEATLY, MCMAHON, BURGGREN and PINDER
McMahon, T. A. The role of compliance in mammalian running gaits **115**, 263
Macmillan, David L. *See* COOKE and MACMILLAN
Makra, Martha E. and Prior, David J. Angiotensin II can initiate contact-rehydration in terrestrial slugs **119**, 385
Mallefet, J. and Baguet, F. Effects of adrenalin on the oxygen consumption and luminescence of the photophores of the mesopelagic fish *Argyropelecus hemigymnus* **118**, 341
Mambrini, M. *See* CONTE-CAMERINO, BRYANT, LOGRANO and MAMBRINI
Martin, Thomas P. *See* EDGERTON, MARTIN, BODINE and ROY
May, B. *See* BECH, RAUTENBERG and MAY
May, Michael L. *See* CASEY, MAY and MORGAN
Mazzanti, M. *See* CAVAGNA, MAZZANTI, HEGLUND and CITTERIO
Meech, R. W. *See* KERFOOT, MACKIE, MEECH, ROBERTS and SINGLA
Messenger, John B. *See* KIER, MESSENGER and MIYAN
Meyer, Ronald A. *See* TERJUNG, DUDLEY and MEYER
Miles, Carol I. The effects of behaviourally relevant temperatures on mechanosensory neurones of the grasshopper, *Schistocerca gregaria* **116**, 121
Milsom, William K. and Jones, David R. Characteristics of mechanoreceptors in the air-breathing organ of the holostean fish, *Amia calva* **117**, 389
Miyan, Jaleel A. *See* KIER, MESSENGER and MIYAN
Miyan, Jaleel A. and Ewing, Arthur W. Is the 'click' mechanism of dipteran flight an artefact of CCl_4 anaesthesia? **116**, 313
Mohri, Hideo. *See* ISHIJIMA and MOHRI
Montgomery, J. C. and Macdonald, J. A. Oculomotor function at low temperature: antarctic *versus* temperate fish **117**, 181
Morgan, D. L. From sarcomeres to whole muscles **115**, 69
Morgan, Kenneth R. *See* CASEY, MAY and MORGAN
Morris, S. and Bridges, C. R. An investigation of haemocyanin oxygen affinity in the semi-terrestrial crab *Ocypode saratan* Forsk **117**, 119
Moss, Anthony G. *See* TAMM and MOSS
Muller, M., van Leeuwen, J. L., Osse, J. W. M. and Drost, M. R. Prey capture hydrodynamics in fishes: two approaches **119**, 389
Myers, M. J. and Steudel, K. Effect of limb mass and its distribution on the energetic cost of running **116**, 363

Naitoh, Yutaka. *See* HARA, ASAI and NAITOH
Nalbach, H.-O., Thier, P. and Varjú, D. Light-dependent eye coupling during the optokinetic response of the crab *Carcinus maenas* (L.) **119**, 103
Navarrete, R. *See* VRBOVÁ, NAVARRETE and LOWRIE
Nicholls, S. P. Fluid secretion by the Malpighian tubules of the dragonfly *Libellula quadrimaculata* **116**, 53
Nilsson, Stefan. Filament position in fish gills is influenced by a smooth muscle innervated by adrenergic nerves **118**, 433
—*See also* SMITH, NILSSON, WAHLQVIST and ERIKSSON

O'Donnell, M. J. Calcium action potentials in the developing oocytes of an insect, *Rhodnius prolixus* **119**, 287
— *See also* MACHIN, LAMPERT and O'DONNELL
Oikari, A. O. J. and Rankin, J. C. Renal excretion of magnesium in a freshwater teleost, *Salmo gairdneri* **117**, 319

Oikawa, Shin and Itazawa, Yasuo. Gill and body surface areas of the carp in relation to body mass, with special reference to the metabolism–size relationship **117**, 1

Oldfield, Brian Phillip. The role of the tympanal membranes in the tuning of auditory receptors in Tettigoniidae (Orthoptera: Ensifera) **116**, 493

Osse, J. W. M. *See* MULLER, VAN LEEUWEN, OSSE and DROST

Otter, T. and Salmon, E. D. Pressure-induced changes in Ca^{2+}-channel excitability in *Paramecium* **117**, 29

Parenti, P., Giordana, B., Sacchi, V. F., Hanozet, G. M. and Guerritore, A. Metabolic activity related to the potassium pump in the midgut of *Bombyx mori* larvae **116**, 69

Pašić, Mira. *See* ZEČEVIĆ, LEVITAN and PAŠIĆ

Peachey, Lee D. Excitation-contraction coupling: the link between the surface and the interior of a muscle cell **115**, 91

Pelhate, M. *See* SATTELLE, HARROW, DAVID, PELHATE, CALLEC, GEPNER and HALL

Perry, S. F., Daxboeck, C. and Dobson, G. P. The effect of perfusion flow rate and adrenergic stimulation on oxygen transfer in the isolated, saline-perfused head of rainbow trout (*Salmo gairdneri*) **116**, 251

Perry, S. F. and Wood, C. M. Kinetics of branchial calcium uptake in the rainbow trout: effects of acclimation to various external calcium levels **116**, 411

Perry, S. V. Properties of the muscle proteins – a comparative approach **115**, 31

Peters, R. C. and Evers, H. P. Frequency selectivity in the ampullary system of an elasmobranch fish (*Scyliorhinus canicula*) **118**, 99

Pette, Dirk. Metabolic heterogeneity of muscle fibres **115**, 179

Pettit, Michael J. and Beitinger, Thomas L. Oxygen acquisition of reedfish **114**, 289

Phifer, Curtis B. and Prior, David J. Body hydration and haemolymph osmolality affect the feeding and its neural correlate in the terrestrial gastropod, *Limax maximus* **118**, 405

Phillips, J. E. *See* HANRAHAN and PHILLIPS

Pinder, Alan. *See* BURGGREN, PINDER, MCMAHON, WHEATLY and DOYLE

Pinder, Alan W. *See* WHEATLY, MCMAHON, BURGGREN and PINDER

Platt, Nicholas and Reynolds, Stuart E. Cardioactive peptides from the CNS of a caterpillar, the tobacco hornworm, *Manduca sexta* **114**, 397

Potts, W. T. W., Talbot, C. and Eddy, F. B. Sodium balance in fresh-run Atlantic salmon **118**, 455

Prior, David J. *See* HESS and PRIOR

—*See also* MAKRA and PRIOR

—*See also* PHIFER and PRIOR

Prosser, C. L. *See* KLEIN and PROSSER

Quintinskie, John J. *See* GOLLNICK, RIEDY, QUINTINSKIE and BERTOCCI

Rankin, J. C. *See* OIKARI and RANKIN

Rankin, M. A. *See* SCHULTZ and RANKIN

Rathmayer, W. and Hammelsbeck, M. Identified muscle fibres in a crab. Differences in facilitation properties **116**, 291

Rautenberg, W. *See* BARNAS, GLEESON and RAUTENBERG

—*See also* BECH, RAUTENBERG and MAY

—*See also* GLEESON, BARNAS and RAUTENBERG

Rayner, J. M. V. and Aldridge, H. D. J. N. Three-dimensional reconstruction of animal flight paths and the turning flight of microchiropteran bats **118**, 247

Reynolds, Stuart E. *See* PLATT and REYNOLDS

Richardson, P. A. *See* COSSINS and RICHARDSON

Riedy, Mark. *See* GOLLNICK, RIEDY, QUINTINSKIE and BERTOCCI

Roberts, Alan. *See* KERFOOT, MACKIE, MEECH, ROBERTS and SINGLA

Roy, Roland R. *See* EDGERTON, MARTIN, BODINE and ROY

Russell, David F. Pattern and reset analysis of the gastric mill rhythm in a spiny lobster, *Panulirus interruptus* **114**, 71

—Neural basis of teeth coordination during gastric mill rhythms in spiny lobsters, *Panulirus interruptus* **114**, 99

Ryan, Michael J. Energetic efficiency of vocalization by the frog *Physalaemus pustulosus* **116**, 47

Sacchi, V. F. *See* PARENTI, GIORDANA, SACCHI, HANOZET and GUERRITORE

Salmon, E. D. *See* OTTER and SALMON

Saltin, B. Malleability of the system in overcoming limitations: functional elements **115**, 345

Sattelle, D. B., Harrow, I. D., David, J. A., Pelhate, M., Callec, J. J., Gepner, J.I. and Hall, L. M. Nereistoxin: actions on a CNS acetylcholine receptor/ion channel in the cockroach *Periplaneta americana* **118**, 37

Satterlie, Richard A. Structural variability of an identified interneurone in locusts from a wild population **114**, 691

Satterlie, Richard A., LaBarbera, Michael and Spencer, Andrew N. Swimming in the pteropod mollusc, *Clione limacina*. I. Behaviour and morphology **116**, 189

Satterlie, Richard A. and Spencer, Andrew N. Swimming in the pteropod mollusc, *Clione limacina*. II. Physiology **116**, 205

Schaffer, William M. *See* COOPER, SCHAFFER and BUCHMANN

Schrag, Joseph D. *See* TURNER, SCHRAG and DEVRIES

Schultz, T. D. and Rankin, M. A. The ultrastructure of the epicuticular interference reflectors of tiger beetles (*Cicindela*) **117**, 87

—Developmental changes in the interference reflectors and colorations of tiger beetles (*Cicindela*) **117**, 111

Seymour, R. S. *See* BENNETT, SEYMOUR, BRADFORD and WEBB

Seymour, R. S., Bennett, A. F. and Bradford, D. F. Blood gas tensions and acid-base regulation in the salt-water crocodile, *Crocodylus porosus*, at rest and after exhaustive exercise **118**, 143

Shadwick, Robert E. and Goaline, John M. Physical and chemical properties of rubber-like elastic fibres from the octopus aorta **114**, 239

—Mechanical properties of the octopus aorta **114**, 259

Sidell, Bruce D. *See* JOHNSTON, SIDELL and DRIEDZIC

Sillar, Keith T. and Heitler, William J. The neural basis of escape swimming behaviour in the squat lobster *Galathea strigosa*. I. Absence of cord giant axons and anatomy of motor neurones involved in swimming **117**, 251

—The neural basis of escape swimming behaviour in the squat lobster *Galathea strigosa*. II. The motor programme and sensory feedback interactions **117**, 271

—The neural basis of escape swimming behaviour in the squat lobster *Galathea strigosa*. III. Mechanisms for burst production **117**, 291

Silver, Randi B. and Jackson, Donald C. Ventilatory and acid-base responses to long-term hypercapnia in the freshwater turtle, *Chrysemys picta bellii* **114**, 661

Simmons, Peter J. Postsynaptic potentials of limited duration in visual neurones of a locust **117**, 191

Singla, C. L. *See* KERFOOT, MACKIE, MEECH, ROBERTS and SINGLA

Smith, David G., Nilsson, Stefan, Wahlqvist, Inger and Eriksson, Britt-Marie. Nervous control of the blood pressure in the Atlantic cod, *Gadus morhua* **117**, 335

Smith, Kathleen K. and Hylander, William L. Strain gauge measurement of mesokinetic movement in the lizard *Varanus exanthematicus* **114**, 53

Smith, P. J. S. Cardiac performance in response to loading pressures in *Busycon canaliculatum* (Gastropoda) and *Mercenaria mercenaria* (Bivalvia) **119**, 301

—*See also* WELLS and SMITH

Smith, P. J. S., Duthie, G. G., Wells, M. J. and Houlihan, D. F. Continuous recording of arterial blood P_{O2} in *Octopus vulgaris* during progressive hypoxia and movement **117**, 475

Smits, Allan W. and Kozubowski, Mark M. Partitioning of body fluids and cardiovascular responses to circulatory hypovolaemia in the turtle, *Pseudemys scripta elegans* **116**, 237

Spencer, Andrew N. *See* SATTERLIE, LABARBERA and SPENCER

—*See also* SATTERLIE and SPENCER

Steffensen, John Fleng. The transition between branchial pumping and ram ventilation in fishes: energetic consequences and dependence on water oxygen tension **114**, 141

Steudel, K. *See* MYERS and STEUDEL

Stuart, Ann E. *See* TIMPE and STUART

Takahata, M., Yoshino, M. and Hisada, M. Neuronal mechanisms underlying crayfish steering behaviour as an equilibrium response **114**, 599

Talbot, C. *See* POTTS, TALBOT and EDDY

Tamm, Sidney L. and Moss, Anthony G. Unilateral ciliary reversal and motor responses during prey capture by the ctenophore *Pleurobrachia* **114**, 443

Tashjian, A. H. *See* HESLOP, IRVINE, TASHJIAN and BERRIDGE

Taylor, C. Richard. Force development during sustained locomotion: a determinant of gait, speed and metabolic power **115**, 253

Taylor, Colin W. Calcium absorption by the midgut of the blowfly, *Calliphora vicina* **114**, 551

Taylor, E. W. *See* BARRETT and TAYLOR

Taylor, Peter M. Electrical-potential difference and sodium ion fluxes across the integument of *Corophium volutator* (*Crustacea; Amphipoda*), a euryhaline hyperosmotic regulator **114**, 477

ten Bruggencate, Gerrit. *See* BARBER and TEN BRUGGENCATE

Terjung, Ronald L., Dudley, Gary A. and Meyer, Ronald A. Metabolic and circulatory limitations to muscular performance at the organ level **115**, 307

Thier, P. *See* NALBACH, THIER and VARJÚ

Timpe, Leslie C. and Stuart, Ann E. Acetylcholine depolarizes barnacle photoreceptors **117**, 481

Toews, Daniel P. *See* TUFTS and TOEWS

Trimmer, Barry Andrew. Serotonin and the control of salivation in the blowfly *Calliphora* **114**, 307

Truman, James W. *See* DOMINICK and TRUMAN

—*See also* TUBLITZ and TRUMAN

Tsacopoulos, M. *See* DIMITRACOS and TSACOPOULOS

Tsuchiya, T. The maximum shortening velocity of holothurian muscle and effects of tonicity on it **119**, 31

Tublitz, Nathan J. and Truman, James W. Insect cardioactive peptides. I. Distribution and molecular characteristics of two cardio-acceleratory peptides in the tobacco hawkmoth, *Manduca sexta* **114**, 365

—Insect cardioactive peptides. II. Neurohormonal controls of heart activity by two cardio-acceleratory peptides in the tobacco hawkmoth, *Manduca sexta* **114**, 381

—Identification of neurones containing cardio-acceleratory peptides (CAPs) in the ventral nerve cord of the tobacco hawkmoth, *Manduca sexta* **116**, 395

Tufts, Bruce L. and Toews, Daniel P. Partitioning of regulatory sites in *Bufo marinus* during hypercapnia **119**, 199
Turner, Jeffrey D., Schrag, Joseph D. and DeVries, Arthur L. Ocular freezing avoidance in antarctic fish **118**, 121

van den Berg, A. V. Analysis of the phase difference between particle motion components of sound by teleosts **119**, 183
van Leeuwen, J. L. *See* MULLER, VAN LEEUWEN, OSSE and DROST
van Rijs, Jeanne H. *See* FLIK, VAN RIJS and WENDELAAR BONGA
Varjú, D. *See* NALBACH, THIER and VARJÚ
Videler, John and Kamermans, Pauline. Differences between upstroke and downstroke in swimming dolphins **119**, 265
von Seckendorf Hoff, Karin. *See* WASSERSUG and VON SECKENDORF HOFF
Vrbová, G., Navarrete, R. and Lowrie, M. Matching of muscle properties and motoneurone firing patterns during early stages of development **115**, 113

Wahlqvist, Inger. *See* SMITH, NILSSON, WAHLQVIST and ERIKSSON
Wassersug, Richard J. and von Seckendorf Hoff, Karin. The kinematics of swimming in anuran larvae **119**, 1
Watanabe, Isao. *See* AZUMA, AZUMA, WATANABE and FURUTA
Watson, Winsor H., III, Hoshi, Toshinori, Colburne, John and Augustine, George G. Neurohormonal modulation of the *Limulus* heart: amine actions on neuromuscular transmission and cardiac muscle **118**, 71
Webb, G. J. W. *See* BENNETT, SEYMOUR, BRADFORD and WEBB
Webb, P. W. *See* JOHNSRUDE and WEBB
Wehner, Frank and Hildebrand, Eilo. Determination of pure voltage-dependent Ca^{2+}-current in *Paramecium caudatum* and its inhibition by divalent cations **119**, 321
Weibel, Ewald R. Design and performance of muscular systems: an overview **115**, 405
Wells, J. *See* WELLS and WELLS
Wells, M. J. *See* SMITH, DUTHIE, WELLS and HOULIHAN
Wells, M. J. and Wells, J. Ventilation and oxygen uptake by *Nautilus* **118**, 297
—Ventilation frequencies and stroke volumes in acute hypoxia in *Octopus* **118**, 445
Wells, M. J. and Smith, P. J. S. The ventilation cycle in *Octopus* **116**, 375
Wendelaar Bonga, Sjoerd E. *See* FLIK, VAN RIJS and WENDELAAR BONGA
Whalen, Robert G. Myosin isoenzymes as molecular markers for muscle physiology **115**, 43
Wheatly, Michele. *See* BURGGREN, PINDER, MCMAHON, WHEATLY and DOYLE
Wheatly, Michèle G., McMahon, Brian R., Burggren, Warren W. and Pinder, Alan W. A rotating respirometer to monitor voluntary activity and associated exchange of respiratory gases in the land hermit crab (*Coenobita compressus*) **119**, 85
Wieser, Wolfgang. Developmental and metabolic constraints of the scope for activity in young rainbow trout (*Salmo gairdneri*) **118**, 133
Wilkie, D. R. Muscle function: a personal view **115**, 1
Williamson, R. Efferent influences on the afferent activity from the octopus angular acceleration receptor system **119**, 251
Wolfersberger, William R. *See* DOW, HARVEY, WOLFERSBERGER and BOYES
Wood, C. M. SEE PERRY and WOOD
—*See also* WRIGHT and WOOD
Wood, Chris M. *See* CAMERON and WOOD
Wood, Chris M. and Cameron, James N. Temperature and the physiology of intracellular and extracellular acid-base regulation in the blue crab *Callinectes sapidus* **114**, 151
Wood, David C. The mechanism of tubocurarine action on mechanoreceptor channels in the protozoan *Stentor coeruleus* **117**, 215
Wood, S. *See* FARRELL, WOOD, HART and DRIEDZIC
Work, Robert W. Viscoelastic behaviour and wet supercontraction of major ampullate silk fibres of certain orb-web-building spiders (Araneae) **118**, 379
Wright, Jonathan. *See* DAINTON and WRIGHT
Wright, P. A. and Wood, C. M. An analysis of branchial ammonia excretion in the freshwater rainbow trout: effects of environmental pH changes and sodium uptake blockade **114**, 329

Yoshino, M. *See* TAKAHATA, YOSHINO and HISADA
Young, David. *See* JOSEPHSON and YOUNG

Zečević, Dejan, Levitan, Herbert and Pašić, Mira. Temperature acclimation: influence on transient outward and inward currents in an identified neurone of *Helix pomatia* **117**, 369
Zerahn, Karl. Water transport across the short-circuited midgut of the American silkworm **116**, 481
Zill, Sasha N. Plasticity and proprioception in insects. I. Responses and cellular properties of individual receptors of the locust metathoracic femoral chordotonal organ **116**, 435
—Plasticity and proprioception in insects. II. Modes of reflex action of the locust metathoracic femoral chordotonal organ **116**, 463

INDEX OF SUBJECTS

Acceleration-sensitivity:
Of the stick insect femoral chordotonal organ (HOFMANN and KOCH) **114**, 225
Acetylcholine:
Depolarization of barnacle photoreceptors (TIMPE and STUART) **117**, 481
—Receptor/ion channel in the cockroach, actions of nereistoxin (SATTELLE, HARROW, PELHATE and CALLEC) **118**, 37
—Effect on ion concentrations in snail salivary glands (BARBER and TEN BRUGGENCATE) **118**, 427
Acid-base regulation:
In turtles, effects of temperature (GLASS, BOUTILIER and HEISLER) **114**, 37
—In freshwater turtles exposed to long-term hypercapnia (SILVER and JACKSON) **114**, 661
—In exhausted *Crocodylus crocodylus* (SEYMOUR, BENNETT and BRADFORD) **118**, 143; (BENNETT, SEYMOUR, BRADFORD and WEBB) **118**, 161
Acidosis:
In teleost fish, protective effect of adrenalin on the heart (FARRELL) **116**, 503
Action potentials:
In the developing oocytes of *Rhodnius prolixus* (O'DONNELL) **119**, 287
Active transport:
Of calcium across midgut of blowfly (TAYLOR) **114**, 551
Activity:
In the slug, stimulation by falling temperature (DAINTON and WRIGHT) **118**, 439
Activity patterns:
Of immature motoneurones in developing muscle (VRBOVÁ, NAVARRETE and LOWRIE) **115**, 113
Adaptation:
Of muscle from fast- to slow-twitch and *vice versa* (EISENBERG) **115**, 55
—Of muscle to endurance training, metabolic consequences of (GOLLNICK, RIEDY, QUINTINSKIE and BERTOCCI) **115**, 191
—Of muscle microvasculature in skeletal muscle (HUDLICKÁ) **115**, 215
—Of muscle to temperature changes (BENNETT) **115**, 333
—Of muscle fibres during growth and training (GOLDSPINK) **115**, 375
Adrenalin:
Sensitivity to, of melanophores and xanthophores in winter flounder (BURTON) **114**, 649
—Protective effect on the acidotic teleost heart (FARRELL) **116**, 503
—Effect on Na^+/H^+ exchange in trout erythrocytes (COSSINS and RICHARDSON) **118**, 229
—Effect on photophores from a mesopelagic fish (MALLEFET and BAGUET) **118**, 341
Adrenergic control:
Of blood pressure, in cod (SMITH, NILSSON, WAHLQVIST and ERIKSSON) **117**, 335
—Of cod gill filament position (NILSSON) **118**, 433
Aerodynamics:
Of pigeon take-off (HEPPNER and ANDERSON) **114**, 285
Allometry:
Of the locust jumping mechanism (GABRIEL) **118**, 313
Alphastat hypothesis:
Not applicable to temperature dependence of acid-base status in turtles (GLASS, BOUTILIER and HEISLER) **114**, 37
Amines:
Role in modulation of *Limulus* heart (AUGUSTINE and FETTERER) **118**, 53; (WATSON, HOSHI, COLBURNE and AUGUSTINE) **118**, 71
Ammonia:
Branchial excretion by trout, effect of environmental pH and sodium uptake block (WRIGHT and WOOD) **114**, 329
Ampullate fibres:
Of spider silk, viscoelastic behaviour and wet supercontraction (WORK) **118**, 379
Anaerobic capacity:
Of *Crocodylus crocodylus* (BENNETT, SEYMOUR, BRADFORD and WEBB) **118**, 161
Angiotensin II:
Role in initiation of contact-rehydration in slugs (MAKRA and PRIOR) **119**, 385
Angular acceleration receptor system:
Of the octopus, efferent influences on afferent activity (WILLIAMSON) **119**, 251
Anoxia:
Effect on contractile performance of cephalopod heart (DRIEDZIC) **117**, 471
Antarctic fish:
Effect of low temperature on oculomotor function (MONTGOMERY and MACDONALD) **117**, 181
—Avoidance of ocular freezing (TURNER, SCHRAG and DEVRIES) **118**, 121
Anterior byssal retractor muscle:
Cold-induced contracture in *Mytilus edulis* (LINEHAN) **119**, 133
Aorta:
Of octopus, properties of elastic, rubber-like fibres (SHADWICK and GOSLINE) **114**, 239, 259
***Aplysia californica*:**
Sensory control of respiratory pumping (CROLL) **117**, 15
Auditory receptors:
Role of insect tympanal membranes in tuning (OLDFIELD) **116**, 493

Autotomy:
Mechanical properties of tissues in a holothurian (BYRNE) **117**, 69

Barnacle:
Depolarization of photoreceptors by acetylcholine (TIMPE and STUART) **117**, 481
Bats:
Three-dimensional reconstruction of flight paths and turns (RAYNER and ALDRIDGE) **118**, 247
Binocular interaction:
During the optokinetic response of the crab (NALBACH, THIER and VARJÚ) **119**, 103
Bioluminescence:
Control of, in the ctenophore *Mnemiopsis leidyi* (ANCTIL) **119**, 225
Birds:
Role of chemoreceptors in control of respiratory ventilation in the chicken (BARNAS and BURGER) **114**, 121
—Physiological responses of exercising chickens to spinal cord cooling (BARNAS, GLEESON and RAUTENBERG) **114**, 415; (GLEESON, BARNAS and RAUTENBERG) **114**, 427
—Ventilatory oxygen extraction during cold exposure in the pigeon (BECH, RAUTENBERG and MAY) **116**, 499
Blood:
Effect of infusion on limitations to $\dot{V}_{O_2}$max in trained muscle (DI PRAMPERO) **115**, 319
—Effect of hypoxia and movement in *Octopus* (SMITH, DUTHIE, WELLS and HOULIHAN) **117**, 475
Blood gases:
Regulation of, in *Crocodylus crocodylus* (SEYMOUR, BENNETT and BRADFORD) **118**, 143
Blood pressure:
Nervous control of, in cod (SMITH, NILSSON, WAHLQVIST and ERIKSSON) **117**, 335
Blowfly:
Control of salivation (TRIMMER) **114**, 307
—Calcium absorption by the midgut (TAYLOR) **114**, 551
Body fluids:
Partitioning, after haemorrhage in the turtle (SMITS and KOZUBOWSKI) **116**, 237
Body surface area:
Relationship with body mass in the carp (OIKAWA and ITAZAWA) **117**, 1
Bone:
Response to hypercapnia in fish (CAMERON) **117**, 307
Bowfin:
Mechanoreceptors in the air-breathing organ of *Amia calva* (MILSOM and JONES) **117**, 389
Buffering:
Capacity of the bone compartment of teleost fish (CAMERON) **117**, 307
Burst pattern:
In the gastric mill rhythm of the spiny lobster (RUSSELL) **114**, 71

Calcification:
Of blue crab carapace after moulting (CAMERON and WOOD) **114**, 181
—Of blue crab carapace after moulting (CAMERON) **119**, 275
Ca^{2+}-ATPase:
In membrane preparations from the gill epithelium of a teleost fish (FLIK, VAN RIJS and WENDELAAR BONGA) **119**, 335
Calcium:
Absorption by blowfly midgut (TAYLOR) **114**, 551
—In plasma, increase after long-term hypercapnia in freshwater turtles (SILVER and JACKSON) **114**, 661
—Branchial uptake in the rainbow trout (PERRY and WOOD) **116**, 411
—In the blood of 'stressed' rainbow trout (ANDREASEN) **118**, 111
—Action potentials in developing insect oocytes (O'DONNELL) **119**, 287
—Membrane current in *Paramecium* and its inhibition by divalent cations (WEHNER and HILDEBRAND) **119**, 321
Capacitation:
Of hamster spermatozoa (ISHIJIMA and MOHRI) **114**, 463
Carapace:
Carbonates from, role in compensation of hypercapnic acidosis in the blue crab (CAMERON) **114**, 197
Cardiac performance:
Of molluscs, in response to loading pressure (SMITH) **119**, 301
Cardiac vagus:
Characteristics of motoneurones in the dogfish (BARRETT and TAYLOR) **117**, 433, 449, 459
Cardioregulation:
Neurohormonal control of heart activity in the tobacco hawkmoth (TUBLITZ and TRUMAN) **114**, 365, 381
—Cardioactive peptides from the central nervous system of *Manduca sexta* (PLATT and REYNOLDS) **114**, 397
—In *Manduca sexta*, identification of neurones containing cardioacceleratory peptides (TUBLITZ and TRUMAN) **116**, 395
Cardiovascular responses:
Of exercising chickens, to spinal cord cooling (BARNAS, GLEESON and RAUTENBERG) **114**, 415
Catecholamines:
Effect on oxygen uptake by the gills of the rainbow trout (PERRY, DAXBOECK and DOBSON) **116**, 251
Central nervous system:
Innervation patterns of inhibitory motor neurones in the locust thorax (HALE and BURROWS) **117**, 401
Central pattern generator:
In the gastric mill rhythm of the spiny lobster (RUSSELL) **114**, 99

—In the swimmeret system of crayfish (HEITLER) **114**, 521
—Modulation by serotonin, in the lamprey (HARRIS-WARRICK and COHEN) **116**, 27
—For escape swimming behaviour in the squat lobster (SILLAR and HEITLER) **117**, 251, 271, 291
Chemoreceptors:
In the control of ventilatory movements in the chicken (BARNAS and BURGER) **114**, 121
Chloride cell:
Role in branchial calcium uptake in rainbow trout (PERRY and WOOD) **116**, 411
Chloride conductance:
Of skeletal muscle fibres from green sunfish, effect of temperature acclimation (KLEIN) **114**, 581
Chordotonal organ:
Physiology of, in the stick insect (HOFMANN, KOCH and BÄSSLER) **114**, 207
—Acceleration receptors, in the stick insect (HOFMANN and KOCH) **114**, 225
—In the locust, association with strand receptors (BRÄUNIG) **116**, 331
—In the locust, responses, cellular properties and reflex action of (ZILL) **116**, 435, 463
Chromatophores:
Innervation of, in *Eledone cirrhosa* (DUBAS and BOYLE) **117**, 415
Cicada:
Okanagana vanduzeei, operating frequency of the tymbal muscle (JOSEPHSON and YOUNG) **118**, 185
***Cicindela*:**
Ultrastructure of the epicuticular interference reflectors (SCHULTZ and RANKIN) **117**, 87, 111
Ciliary reversal:
During prey capture by *Pleurobrachia* (TAMM and MOSS) **114**, 443
Circadian rhythm:
Of the slug, response to dehydration (HESS and PRIOR) **116**, 323
Circulation:
As a limiting factor to human muscle work (SALTIN) **115**, 345
—Interaction with ventilation in the land crab (BURGGREN, PINDER, MCMAHON, WHEATLY and DOYLE) **117**, 133
'Click' mechanism:
Of dipteran flight, an artefact of anaesthesia? (MIYAN and EWING) **116**, 313
Coelenterate:
Aglantha digitale, neuromuscular transmission in (KERFOOT, MACKIE, MEECH, ROBERTS and SINGLA) **116**, 1
Cold exposure:
Effect on ventilatory oxygen extraction in the pigeon (BECH, RAUTENBERG and MAY) **116**, 499
Cold-induced contracture:
Of the anterior byssal retractor muscle of *Mytilus edulis* (LINEHAN) **119**, 133
Connective tissue:
Mechanical properties of autotomy tissue in a holothurian (BYRNE) **117**, 69
Contact-rehydration:
In slugs, initiation by angiotensin II (MAKRA and PRIOR) **119**, 385
Contractile properties:
Of skeletal muscle from antarctic fish (JOHNSTON and HARRISON) **116**, 223
Contraction:
Of skeletal muscle, control of (PEACHEY) **115**, 91
Contraction mechanism:
Of muscle, role of crossbridges (HUXLEY) **115**, 17
Controlled environment:
Modifications to a cabinet to gain proportional control (HAGAN and COOK) **118**, 423
Coordination:
Of legs in walking stick insects (CRUSE) **114**, 513
Cost of locomotion:
Unsteady medusan swimming (DANIEL) **119**, 149
Cost of ventilation:
In the transition between branchial pumping and ram ventilation in fishes (STEFFENSEN) **114**, 141
Crab:
Callinectes sapidus, effect of temperature on acid-base regulation (WOOD and CAMERON) **114**, 151
—*Callinectes sapidus*, physiology of carapace mineralization after moulting (CAMERON and WOOD) **114**, 181
—*Callinectes sapidus*, compensation of hypercapnic acidosis (CAMERON) **114**, 197
—Facilitation properties of identified muscle fibres in *Eriphia* (RATHMAYER and HAMMELSBECK) **116**, 291
—Threshold for vision (DOUJAK) **116**, 385
—Semi-terrestrial, haemocyanin oxygen affinity of (MORRIS and BRIDGES) **117**, 119
—Ventilation, circulation and their interactions in a land crab (BURGGREN, PINDER, MCMAHON, WHEATLY and DOYLE) **117**, 133
—*Callinectes sapidus*, effect of exercise on lactate dynamics (BOOTH and MCMAHON) **118**, 461
—*Coenobita compressus*, gas exchange during voluntary exercise (WHEATLY, MCMAHON, BURGGREN and PINDER) **119**, 85
—Light-dependent eye coupling during the optokinetic response (NALBACH, THIER and VARJÚ) **119**, 103
—Post-moult calcification in *Callinectes sapidus* (CAMERON) **119**, 275
Crayfish:
Motor programme switching in the swimmeret system (HEITLER) **114**, 521
—Neuronal mechanisms underlying steering behaviour (TAKAHATA, YOSHINO and HISADA) **114**, 599
—Studies of escape behaviour (COOKE and MACMILLAN) **118**, 351; (COOKE) **118**, 367
Crickets:
Gryllus bimaculatus, temperature coupling in the acoustic communication system (DOHERTY) **114**, 17

—*Gryllus bimaculatus*, multisegmental integration and divergence of afferent information from single tactile hairs (HUSTERT) **118**, 209

Crossbridges:
Role in the mechanism of muscular contraction (HUXLEY) **115**, 17

Crustaceans:
Electrical-potential difference and sodium flux across the integument of *Corophium volutator* (TAYLOR) **114**, 477

—Urine clearance rates and apparent permeability of *Gammarus* exposed to varying conditions (BOLT) **114**, 673

—Neural basis of escape behaviour in *Galathea strigosa* (SILLAR and HEITLER) **117**, 251, 271, 291

—Electrophysiology of peptidergic neurosecretory terminals (COOKE) **118**, 1

Ctenophore:
Unilateral ciliary reversal and motor responses during prey capture (TAMM and MOSS) **114**, 443

—Mechanism of control of bioluminescence in *Mnemiopsis leidyi* (ANCTIL) **119**, 225

Curare:
Action on mechanoreceptor channels in *Stentor coeruleus* (WOOD) **117**, 215

***Cyprinus carpio*:**
Force-velocity characteristics and muscle metabolism following temperature acclimation (JOHNSTON, SIDELL and DRIEDZIC) **119**, 239

DCMD:
Structural variability, in a population of wild locusts (SATTERLIE) **114**, 691

Dehydration:
Locomotory response of the slug (HESS and PRIOR) **116**, 323

—Effect on feeding and its neural correlate in the slug (PHIFER and PRIOR) **118**, 405

Development:
Of skeletal muscle, isoenzyme transitions (WHALEN) **115**, 34

—Matching of muscle properties and motoneurone firing patterns (VRBOVÁ, NAVARRETE and LOWRIE) **115**, 113

—Of microvasculature in skeletal muscle (HUDLICKÁ) **115**, 215

***Didinium nasutum*:**
Membrane electrical responses to discharge of the extrusive organelles (HARA, ASAI and NAITOH) **119**, 211

Diptera:
Novel flight mechanism (MIYAN and EWING) **116**, 313

Dogfish:
Vagal control of heart rate and ventilation (BARRETT and TAYLOR) **117**, 433, 449, 459

—Efflux of urea from the pup: effect of stress (EVANS and KORMANIK) **119**, 375

Dolphin:
Differences between upstroke and downstroke in swimming (VIDELER and KAMERMANS) **119**, 265

Dopamine:
Actions on *Limulus* heart (AUGUSTINE and FETTERER) **118**, 53; (WATSON, HOSHI, COLBURNE and AUGUSTINE) **118**, 71

Dragonfly:
Fluid secretion by the Malpighian tubules (NICHOLLS) **116**, 53

—Mechanics of flight (AZUMA, AZUMA, WATANABE and FURUTA) **116**, 79

Echinoderm:
Sperm receptivity in sea urchin oocytes and eggs (DALE) **118**, 85

Efficiency:
Of vertebrate locomotory muscles (HEGLUND and CAVAGNA) **115**, 283

—And power of insect flight muscle (ELLINGTON) **115**, 293

Elastic fibres:
In octopus aorta, physical and chemical properties (SHADWICK and GOSLINE) **114**, 239

Electric organ:
Of *Eigenmannia*, sexual dimorphism of discharge patterns (KRAMER) **119**, 41

Electrophysiology:
Of peptidergic neurosecretory terminals in crab sinus glands (COOKE) **118**, 1

Electroreceptors:
In the ampullary system of *Scyliorhinus canicula* (PETERS and EVERS) **118**, 99

Endocrine control:
Of wandering behaviour in *Manduca sexta* larvae (DOMINICK and TRUMAN) **117**, 45

Endurance:
Of flying foxes during flight (CARPENTER) **114**, 619

Energetics:
Of frog vocalizations (RYAN) **116**, 47

—Of hovering flight in euglossine bees (CASEY, MAY and MORGAN) **116**, 271

—Of running in mammals, effects of limb mass and its distribution (MYERS and STEUDEL) **116**, 363

—Of running, compared in male and female domestic fowl (BRACKENBURY and EL-SAYED) **117**, 349

Energy:
Sources of, for muscular work (HOCHACHKA) **115**, 149

—Metabolism, heterogeneity of, in muscles (PETTE) **115**, 179

—Storage of, and muscle mechanics of locust jumping (GABRIEL) **118**, 327

Enzyme activity:
Patterns of, in muscle fibres (PETTE) **115**, 179

—Related to the potassium pump in the midgut of *Bombyx mori* larvae (PARENTI, GIORDANA, SACCHI, HANOZET and GUERRITORE) **116**, 69

Epicuticle:
Ultrastructure of interference reflectors in the tiger beetle (SCHULTZ and RANKIN) **117**, 87, 111

Epithelial potential:
Across the integument of *Corophium volutator* (TAYLOR) **114**, 477

Epithelium:
Role in neuromuscular transmission in the jellyfish (KERFOOT, MACKIE, MEECH, ROBERTS and SINGLA) **116**, 1
Equilibrium response:
In crayfish, neuronal mechanisms underlying steering behaviour (TAKAHATA, YOSHINO and HISADA) **114**, 599
Erythrocytes:
In the trout, effect of adrenalin on Na^+/H^+ exchange (COSSINS and RICHARDSON) **118**, 229
Escape behaviour:
Of the squat lobster, neural basis of (SILLAR and HEITLER) **117**, 251, 271, 291
—Of the crayfish (COOKE and MACMILLAN) **118**, 351; (COOKE) **118**, 367
Evaporative cooling:
Of honey bees in the Sonoran desert (COOPER, SCHAFFER and BUCHMANN) **114**, 1
Excitation-contraction coupling:
The link between the surface and the interior of a muscle cell (PEACHEY) **115**, 91
Excretion:
Of magnesium, by *Salmo gairdneri* (OIKARI and RANKIN) **117**, 319
Exercise:
Development of muscle fatigue (TERJUNG, DUDLEY and MEYER) **115**, 307
—Structural effects of, in skeletal muscle (HOPPELER and LINDSTEDT) **115**, 355
—Effect on blood calcium in rainbow trout (ANDREASEN) **118**, 111
—Effect on acid-base regulation in a salt-water crocodile (SEYMOUR, BENNETT and BRADFORD) **118**, 143; (BENNETT, SEYMOUR, BRADFORD and WEBB) **118**, 161
—In the blue crab, effect on lactate dynamics (BOOTH and MCMAHON) **118**, 461
—Voluntary, in the hermit crab, respiratory gas exchange (WHEATLY, MCMAHON, BURGGREN and PINDER) **119**, 85
Eye:
Visual field of, in primitive jumping spiders (LAND) **119**, 381

Facilitation:
In identified crab muscle fibres (RATHMAYER and HAMMELSBECK) **116**, 291
Fatigue:
Development of the fast- and slow-twitch muscle (TERJUNG, DUDLEY and MEYER) **115**, 307
Feeding:
In the slug, effect of dehydration (PHIFER and PRIOR) **118**, 405
Fins:
Mechanoreceptors in cuttlefish (KIER, MESSENGER and MIYAN) **119**, 369
Firing rate:
Interaction with recruitment in control of motor units (DE LUCA) **115**, 125
Fish:
Muscle protein synthesis rates during temperature acclimation in a eurythermal and a stenothermal species (LOUGHNA and GOLDSPINK) **118**, 267
—Hydrodynamics of prey capture (MULLER, VAN LEEUWEN, OSSE and DROST) **119**, 389
Flagellar movement:
Of golden hamster spermatozoa (ISHIJIMA and MOHRI) **114**, 463
Flight:
Importance of leg thrust for take-off of pigeons (HEPPNER and ANDERSON) **114**, 285
—Physiology of, in flying foxes (CARPENTER) **114**, 619
—Power and efficiency of insect muscle (ELLINGTON) **115**, 293
—Mechanics of, for the dragonfly (AZUMA, AZUMA, WATANABE and FURUTA) **116**, 79
—Energetics of hovering in euglossine bees (CASEY, MAY and MORGAN) **116**, 271
—The 'click' mechanism in the Diptera (MIYAN and EWING) **116**, 313
—Of insects, mechanical power output of a tettigoniid wing muscle (JOSEPHSON) **117**, 357
—Of bats, three-dimensional reconstruction of flight paths and turns (RAYNER and ALDRIDGE) **118**, 247
Fluid secretion:
By Malpighian tubules of the dragonfly (NICHOLLS) **116**, 53
Force:
Maximum, exerted by animals in locomotion (ALEXANDER) **115**, 231
—Development of, specializations and variations among vertebrates (JOHNSTON) **115**, 239
—Development of, during sustained locomotion, in the determination of gait, speed and metabolic power (TAYLOR) **115**, 253
Force-velocity characteristics:
Of carp muscle after temperature acclimation (JOHNSTON, SIDELL and DRIEDZIC) **119**, 239
Frog:
Energetic efficiency of vocalizations (RYAN) **116**, 47
Functional connectivity:
In muscular control (HENNEMAN) **115**, 105

***Gadus morhua*:**
Adrenergic control of gill filament position (NILSSON) **118**, 433
Galloping:
Role of compliance (MCMAHON) **115**, 263
Gas exchange:
During voluntary exercise, in the land crab (WHEATLY, MCMAHON, BURGGREN and PINDER) **119**, 85
Gene expression:
Control of, in muscle (PERRY) **115**, 31
Gene family:
For myosin isoenzymes (WHALEN) **115**, 43

Giant axon:
Role in crayfish escape behaviour (COOKE) **118**, 367
Gills:
Ammonia excretion by, in the rainbow trout (WRIGHT and WOOD) **114**, 329
—Effects of perfusion flow rate and adrenergic stimulation of oxygen uptake (PERRY, DAXBOECK and DOBSON) **116**, 251
—Kinetics of calcium uptake by, in the rainbow trout (PERRY and WOOD) **116**, 411
—Surface area, relationship with body mass in the carp (OIKAWA and ITAZAWA) **117**, 1
—Of cod, adrenergic control of filament position (NILSSON) **118**, 433
—Ca^{2+}-ATPase in membrane preparations from a teleost fish (FLIK, VAN RIJS and WENDELAAR BONGA) **119**, 335
Green sunfish:
Lepomis cyanellus, effect of temperature acclimation on skeletal muscle membrane characteristics (KLEIN and PROSSER) **114**, 563, 581

Haemocyanin:
From semi-terrestrial crabs, oxygen affinity of (MORRIS and BRIDGES) **117**, 119
Haemorrhage:
In the turtle, effects on partitioning of body fluids and the cardiovascular system of the turtle (SMITS and KOZUBOWSKI) **116**, 237
Hearing:
Physiology of, in teleost fish (VAN DEN BERG) **119**, 183
Heart:
Effect of anoxia on contractile performance in cephalopods (DRIEDZIC) **117**, 471
—Intrinsic seasonal performance in a marine teleost fish (GRAHAM and FARRELL) **118**, 287
—Cardiac performance in response to loading pressures in molluscs (SMITH) **119**, 301
Heart rate:
Vagal control, in the dogfish (BARRETT and TAYLOR) **117**, 433, 449, 459
Heat balance:
Of honey bees in the Sonoran desert (COOPER, SCHAFFER and BUCHMANN) **114**, 1
High-energy phosphate:
Splitting and resynthesis during muscular contraction (KUSHMERICK) **115**, 165
History:
Of muscle physiology (WILKIE) **115**, 1
Homing behaviour:
Of the pigeon, magnetic disturbance of (IOALE' and GUIDARINI) **116**, 109
Honey bees:
Temperature regulation, in the Sonoran desert (COOPER, SCHAFFER and BUCHMANN) **114**, 1
—Recovery of the photoreceptors from a transient inhibition of oxidative metabolism (DIMITRACOS and TSACOPOULOS) **119**, 165
Hovering:
Energetics of, in euglossine bees (CASEY, MAY and MORGAN) **116**, 271
Humidity:
Modifications to a cabinet to gain proportional control (HAGAN and COOK) **118**, 423
Hydrostatic pressure:
Effect on Ca^{2+}-channel excitability in *Paramecium* (OTTER and SALMON) **117**, 29
5-Hydroxytryptamine:
In the control of salivation of the blowfly (TRIMMER) **114**, 307
Hypercapnia:
Compensation of, in the blue crab (CAMERON) **114**, 197
—In 'stressed' rainbow trout (ANDREASEN) **118**, 111
—In *Bufo marinus*, partitioning of regulatory sites (TUFTS and TOEWS) **119**, 199
Hyperthermia:
Effect on respiratory pattern in the chicken (GLEESON) **116**, 487
Hypoxia:
Effect on oxygen acquisition by the reedfish (PETTIT and BEITINGER) **114**, 289
—Effect on oxygen consumption of sea raven myocardium (FARRELL, WOOD, HART and DRIEDZIC) **117**, 237
—Effect on arterial blood P_{O_2} in *Octopus* (SMITH, DUTHIE, WELLS and HOULIHAN) **117**, 475
—Effect on blood calcium in rainbow trout (ANDREASEN) **118**, 111
—Effect on ventilation and stroke volumes in *Octopus* (WELLS and WELLS) **118**, 445

Identified neurones:
Connection with sensory neurones from wind-sensitive hairs in the locust (BACON and ANDERSON) **114**, 679
—Structural variability, in a population of wild locusts (SATTERLIE) **114**, 691
—Containing cardioacceleratory peptides, in *Manduca sexta* ventral nerve cord (TUBLITZ and TRUMAN) **116**, 395
—In the snail, effect of temperature acclimation on transient currents (ZEČEVIĆ, LEVITAN and PAŠIĆ) **117**, 369
Imposed movement:
Used to study the role of coxa-thorax joint receptors in walking of stick insects (GRAHAM) **114**, 131
Inactivity:
Effect on rat muscle fibres undergoing reinnervation (CONTE-CAMERINO, BRYANT, LOGRANO and MAMBRINI) **115**, 99
Inositol phosphates:
Calcium mobilization and hormone action (HESLOP, IRVINE, TASHJIAN and BERRIDGE) **119**, 395
Insect midgut:
Calcium absorption by, in *Calliphora* (TAYLOR) **114**, 551
—Measurement of calcium transport in *Manduca sexta* (DOW, HARVEY, WOLFERSBERGER and BOYES) **114**, 685
—Potassium pump in the midgut of *Bombyx mori* larvae (PARENTI, GIORDANA, SACCHI, HANOZET and GUERRITORE) **116**, 69

Insect muscle:
Power output during cyclic contraction (JOSEPHSON) **114**, 493
—Power and efficiency for flight (ELLINGTON) **115**, 293
—Synchronous muscle with an operating frequency greater than 500 Hz (JOSEPHSON and YOUNG) **118**, 185
Interference colour:
Of the epicuticle of tiger beetles (SCHULTZ and RANKIN) **117**, 87, 111
Interneurones:
In integration of afferent information from touch-sensitive hairs in the cricket (HUSTERT) **118**, 209
Intestine:
Of carp, temperature acclimation of sodium transport (GIBSON, ELLORY and COSSINS) **114**, 355
Ion-selective microelectrodes:
Used to study extracellular changes induced by acetylcholine in snail salivary glands (BARBER and TEN BRUGGENCATE) **118**, 427
Isoenzyme transitions:
In developing skeletal muscle (WHALEN) **115**, 43
Isoforms:
Of muscle proteins (PERRY) **115**, 31

Jamming avoidance:
In the electric fish *Eigenmannia*: harmonic analysis of sexually dimorphic waves (KRAMER) **119**, 41
Joint angle receptors:
In locust legs (ZILL) **116**, 435, 463
Jumping:
Development of the mechanism in the locust (GABRIEL) **118**, 313, 327

Kidney:
Regulatory contribution during hypercapnia in *Bufo marinus* (TUFTS and TOEWS) **119**, 199
Kinematics:
Of swimming in anuran larvae (WASSERSUG and VON SECKENDORF HOFF) **119**, 1
—Of dolphin swimming (VIDELER and KAMERMANS) **119**, 265

Lactate:
Dynamics of, during exercise in the blue crab (BOOTH and MCMAHON) **118**, 461
Lamprey:
Modulation of central pattern generator in the isolated spinal cord (HARRIS-WARRICK and COHEN) **116**, 27
Leech:
Habituation of swimming activity in *Hirudo medicinalis* (DEBSKI and FRIESEN) **116**, 169
***Limulus*:**
Neurohormonal modulation of the heart (AUGUSTINE and FETTERER) **118**, 53; (WATSON, HOSHI, COLBURNE and AUGUSTINE) **118**, 71
Lizards:
Measurement of mesokinetic movement in *Varanus exanthematicus* (SMITH and HYLANDER) **114**, 53
Locomotion:
The maximum forces exerted by animals **115**, 231
—Development of force, in the determination of gait, speed and metabolic power (TAYLOR) **115**, 253
—Role of compliance in mammalian running gaits (MCMAHON) **115**, 263
—Efficiency of vertebrate muscle in (HEGLUND and CAVAGNA) **115**, 283
—Modulation of central pattern generator in the isolated lamprey spinal cord (HARRIS-WARRICK and COHEN) **116**, 27
—Habituation of swimming activity in the leech (DEBSKI and FRIESEN) **116**, 169
—In the pteropod mollusc *Clione limacina* (SATTERLIE, LABARBERA and SPENCER) **116**, 189; (SATTERLIE and SPENCER) **116**, 205
—Response of the slug to progressive dehydration (HESS and PRIOR) **116**, 323
—Effect of limb mass and its distribution on the energetic cost of running (MYERS and STEUDEL) **116**, 363
Locust:
Transport of potassium chloride across the rectum (HANRAHAN and PHILLIPS) **116**, 153
—Strand receptors associated with the femoral chordotonal organs (BRÄUNIG) **116**, 331
—Responses, cellular properties and reflex action of the metathoracic femoral chordotonal organ (ZILL) **116**, 435, 463
—Postsynaptic potentials of limited duration in visual neurones (SIMMONS) **117**, 191
—Innervation patterns of inhibitory motor neurones in the thorax (HALE and BURROWS) **117**, 401
Luminescence:
Of photophores from a mesopelagic fish, effect of adrenalin (MALLEFET and BAGUET) **118**, 341
Lunged fish:
Characteristics of mechanoreceptors in the air-breathing organ of *Amia calva* (MILSOM and JONES) **117**, 389

Magnesium:
Renal excretion of, by *Salmo gairdneri* (OIKARI and RANKIN) **117**, 319
Magnetic disturbance:
Of pigeon homing behaviour (IOALE' and GUIDARINI) **116**, 109
Malpighian tubules:
Fluid secretion by, in the dragonfly (NICHOLLS) **116**, 53
***Manduca sexta*:**
Characteristics of two cardioacceleratory peptides (TUBLITZ and TRUMAN) **114**, 365, 381
—Cardioactive peptides from the central nervous system (PLATT and REYNOLDS) **114**, 397

—Calcium transport across midgut, use of an improved short-circuiting chamber (Dow, Harvey, Wolfersberger and Boyes) **114**, 685
—Endocrine control of larval wandering behaviour (Dominick and Truman) **117**, 45
Mantle:
Internal pressure differences during the ventilation cycle of *Octopus* (Wells and Smith) **116**, 375
Mass dependence:
Of anaerobic metabolism in *Crocodylus crocodylus* (Bennett, Seymour, Bradford and Webb) **118**, 161
Mechanical energy:
Mechanism of storage and release in active muscle (Cavagna, Mazzanti, Heglund and Citterio) **115**, 79
Mechanical power:
Output of a tettigoniid wing muscle during singing and flight (Josephson) **117**, 357
Mechanical properties:
Of the octopus aorta (Shadwick and Gosline) **114**, 259 .
—And safety factors of spider drag-lines (Brandwood) **116**, 141
—Of holothurian autotomy tissue (Byrne) **117**, 69
Mechanics:
Of dragonfly flight (Azuma, Azuma, Watanabe and Furuta) **116**, 79
Mechanoreceptor channels:
In *Stentor coeruleus*, mechanism of action of tubocurarine (Wood) **117**, 215
Mechanoreceptors:
In the fins of *Sepia officinalis* (Kier, Messenger and Miyan) **119**, 369
Mechanosensory neurones:
Effect of temperature on (Miles) **116**, 121
Medusae:
Cost of locomotion for unsteady swimming (Daniel) **119**, 149
Melanophores:
In winter flounder, sensitivity to catecholamines (Burton) **114**, 649
Membrane conductance:
Effects of temperature acclimation, in skeletal muscle fibres from green sunfish (Klein and Prosser) **114**, 563
—Influence of inactivity on rat skeletal muscle fibres undergoing reinnervation (Conte-Camerino, Bryant, Lograno and Mambrini) **115**, 99
Membrane electrical responses:
Of *Didinium nasutum* in relation to discharge of the extrusive organelles (Hara, Asai and Naitoh) **119**, 211
Membrane excitability:
Pressure-induced changes in *Paramecium* (Otter and Salmon) **117**, 29
—In *Paramecium caudatum*, and its inhibition by divalent cations (Wehner and Hildebrand) **119**, 321
Mesokinesis:
Measurement of, in a lizard (Smith and Hylander) **114**, 53
Metabolic control:
In endurance-trained, mammalian muscle (Gollnick, Riedy, Quintinskie and Bertocci) **115**, 191
Metabolic indicators:
Of fibre recruitment in mammalian muscles during locomotion (Armstrong and Laughlin) **115**, 201
Metabolism:
Of flying foxes, changes during flight (Carpenter) **114**, 619
—Aerobic and anaerobic, as energy sources for muscle work (Hochachka) **115**, 149
—Patterns in mammalian muscle energetics (Kushmerick) **115**, 165
—Heterogeneity in muscle fibres (Pette) **115**, 179
Metabolism-size relationship:
In the carp (Oikawa and Itazawa) **117**, 1
Microvasculature:
Development and adaptability in skeletal muscle (Hudlická) **115**, 215
Midgut:
In the silkworm, water transport across (Zerahn) **116**, 481
Migration:
Of salmon, sodium balance on entry into fresh water (Potts, Talbot and Eddy) **118**, 455
Mitochondria:
Rapid translocation of ADP generated during activity in endurance-trained muscle (Gollnick, Riedy, Quintinskie and Bertocci) **115**, 191
—Increase in volume density in trained muscle (Hoppeler and Lindstedt) **115**, 355; (Howald) **115**, 365
—In muscle, volume density in different species (Weibel) **115**, 405
***Mnemiopsis leidyi*:**
Mechanism of control of bioluminescence (Anctil) **119**, 225
Mollusca:
Busycon canaliculata and *Mercenaria mercenaria*, cardiac performance in response to loading pressure (Smith) **119**, 301
Motoneurones:
Recruitment of, in muscular control (Henneman) **115**, 105
—Matching of firing patterns to muscle properties during development (Vrbová, Navarrete and Lowrie) **115**, 113
—In task groups for motor control (Loeb) **115**, 137
—Involved in escape swimming behaviour of the squat lobster (Sillar and Heitler) **117**, 251, 271, 291
—Innervation patterns of, in the locust thorax (Hale and Burrows) **117**, 401
—In the dogfish cardiac vagus (Barrett and Taylor) **117**, 433, 449, 459
Motor control:
Coping with kinematic heterogeneity (Loeb) **115**, 137
—Backward walking by stick insects on a slippery surface (Graham and Epstein) **118**, 287

Motor programme:
In the crayfish swimmeret system during rhythmic activity (HEITLER) **114**, 521
—For feeding in the slug, effect of dehydration (PHIFER and PRIOR) **118**, 405
Motor units:
Control properties of (DE LUCA) **115**, 125
—Flexibility of neural control (EDGERTON, MARTIN, BODINE and ROY) **115**, 393
Moulting:
In the blue crab, apparent H^+ excretion and CO_2 dynamics of carapace mineralization (CAMERON and WOOD) **114**, 181
—In the blue crab, relationships between apparent net H^+ excretion, calcium and bicarbonate (CAMERON) **119**, 275
Movement parallax:
In the attack behaviour of the Australian bulldog ant (ERIKSSON) **119**, 115
Muscle blood flow:
As a limiting factor for work in humans (SALTIN) **115**, 345
Muscle energetics:
Biochemical patterns of, in mammals (KUSHMERICK) **115**, 165
Muscle fibres:
Ultrastructural changes during muscle adaptation (EISENBERG) **115**, 55
—Recruitment of, in mammalian muscles (ARMSTRONG and LAUGHLIN) **115**, 201
—Recruitment of, for sustained force development, in vertebrates (JOHNSTON) **115**, 239
—Development of fatigue in fast- and slow-twitch muscle (TERJUNG, DUDLEY and MEYER) **115**, 307
—Transformation of, in strength and endurance training (HOWALD) **115**, 365
—Changes during growth and exercise (GOLDSPINK) **115**, 375
—Facilitation of, in the crab (RATHMAYER and HAMMELSBECK) **116**, 291
Muscle mechanics:
Power output from striated muscle during cyclic contraction (JOSEPHSON) **114**, 493
—Effect of non-uniformity of sarcomeres within whole muscles (MORGAN) **115**, 69
—Storage and release of mechanical energy (CAVAGNA, MAZZANTI, HEGLUND and CITTERIO) **115**, 79
—Maximum forces exerted by animals (ALEXANDER) **115**, 231
—Force development during sustained locomotion (TAYLOR) **115**, 253
—Efficiency of vertebrate locomotory muscles (HEGLUND and CAVAGNA) **115**, 283
—Temperature dependence of (BENNETT) **115**, 333
—Of locust jumping (GABRIEL) **118**, 327
—Effect of tonicity changes on maximum shortening velocity in a holothurian (TSUCHIYA) **119**, 31
—Of the musculo-skeletal system of *Salmo gairdneri* (JOHNSRUDE and WEBB) **119**, 71
Muscle physiology:
A history of (WILKIE) **115**, 1
—Flexibility of the neural control of muscle properties (EDGERTON, MARTIN, BODINE and ROY) **115**, 393
—Design and performance of muscular systems (WEIBEL) **115**, 405
—Of antarctic fish (JOHNSTON and HARRISON) **116**, 223
Muscle spindles:
Role in motor control units (LOEB) **115**, 137
Myocardium:
Of the sea raven, effects of volume and pressure loading and hypoxia on oxygen consumption (FARRELL, WOOD, HART and DRIEDZIC) **117**, 237
Myofibrillar protein isoforms:
In the determination of muscle performance (PERRY) **115**, 31
Myosin:
Isoenzymes as markers for muscle physiology (WHALEN) **115**, 43
***Mytilus edulis*:**
Cold-induced contracture of the anterior byssal retractor muscle (LINEHAN) **119**, 133

Na^+/H^+ exchange:
In trout erythrocytes, effect of adrenalin (COSSINS and RICHARDSON) **118**, 229
***Nautilus*:**
Ventilation and oxygen uptake (WELLS and WELLS) **118**, 297
Nereistoxin:
Actions on a CNS acetylcholine receptor/ion channel in the cockroach (SATTELLE, HARROW, PELHATE and CALLEC) **118**, 37
Nervous control:
Of cephalopod chromatophores (DUBAS and BOYLE) **117**, 415
Neural control:
Of muscle properties, flexibility of (EDGERTON, MARTIN, BODINE and ROY) **115**, 393
Neural network:
Role in the stomatogastric rhythm of the spiny lobster (RUSSELL) **114**, 99
Neuroethology:
Of the stick insect femoral chordotonal organ (HOFMANN, KOCH and BÄSSLER) **114**, 207
Neurohormones:
In the control of blowfly salivation (TRIMMER) **114**, 307
—In the control of heart activity in the tobacco hawkmoth (TUBLITZ and TRUMAN) **114**, 365, 381
—From the central nervous system of *Manduca sexta* (PLATT and REYNOLDS) **114**, 397
—Role in modulation of *Limulus* heart (AUGUSTINE and FETTERER) **118**, 53; (WATSON, HOSHI, COLBURNE and AUGUSTINE) **118**, 71
Neuromuscular transmission:
In the jellyfish *Aglantha digitale* (KERFOOT, MACKIE, MEECH, ROBERTS and SINGLA) **116**, 1

—In the *Limulus* heart, amine action (AUGUSTINE and FETTERER) **118**, 53; (WATSON, HOSHI, COLBURNE and AUGUSTINE) **118**, 71
Neuropeptides:
Cardioacceleratory, characteristics of, in *Manduca sexta* (TUBLITZ and TRUMAN) **114**, 365, 381
—Cardioactive, extracted from *Manduca sexta* (PLATT and REYNOLDS) **114**, 397
—In identified neurones in the ventral nerve cord in *Manduca sexta* (TUBLITZ and TRUMAN) **116**, 395
Non-uniformities:
Of sarcomeres within whole muscles, effect on mechanics (MORGAN) **115**, 69

Ocelli:
In the locust, postsynaptic potentials of limited duration in L-neurones (SIMMONS) **117**, 191
Octopus:
Properties of rubber-like elastic fibres in the aorta (SHADWICK and GOSLINE) **114**, 239, 259
—The ventilation cycle (WELLS and SMITH) **116**, 375
—Chromatophore motor units in *Eledone cirrhosa* (DUBAS and BOYLE) **117**, 415
—Contractile performance of heart in anoxia (DRIEDZIC) **117**, 471
—Continuous recording of blood P_{O_2} during hypoxia and movement (SMITH, DUTHIE, WELLS and HOULIHAN) **117**, 475
—Ventilation frequencies and stroke volumes in acute hypoxia (WELLS and WELLS) **118**, 445
—Efferent influence on afferent activity from the angular acceleration receptor system (WILLIAMSON) **119**, 251
Ocular freezing:
Avoidance of, in antarctic fish (TURNER, SCHRAG and DEVRIES) **118**, 121
Oculomotor system:
Effect of low temperature on function in antarctic and temperate fish (MONTGOMERY and MACDONALD) **117**, 181
Oocytes:
Sperm receptivity in sea urchins (DALE) **118**, 85
—Of *Rhodnius prolixus*, calcium action potentials in (O'DONNELL) **119**, 287
Optokinetic response:
Of the crab, light-dependent eye coupling (NALBACH, THIER and VARJÚ) **119**, 103
Orientation reaction:
In *Scyliorhinus canicula* (PETERS and EVERS) **118**, 99
Osphradium:
Role in sensory control of respiratory pumping in *Aplysia californica* (CROLL) **117**, 15
Oxygen affinity:
Of haemocyanin from land crabs (MORRIS and BRIDGES) **117**, 119
Oxygen consumption:
Of sea raven myocardium, effects of volume and pressure loading and hypoxia (FARRELL, WOOD, HART and DRIEDZIC) **117**, 237
—Relationship to 'scope for activity' in young rainbow trout (WIESER) **118**, 133
—And luminescence of photophores from a mesopelagic fish (MALLEFET and BAGUET) **118**, 341
—During rest and locomotion, in *Blaberus giganteus* (BARTHOLOMEW and LIGHTON) **118**, 449
—Of drone photoreceptors (DIMITRACOS and TSACOPOULOS) **119**, 165
Oxygen uptake:
By the gills of an isolated, semi-perfused head of the rainbow trout (PERRY, DAXBOECK and DOBSON) **116**, 251
—And ventilation by *Nautilus* (WELLS and WELLS) **118**, 297

***Paramecium*:**
Pressure induced changes in Ca^{2+}-channel excitability (OTTER and SALMON) **117**, 29
—Determination of voltage-dependent Ca^{2+} current and its inhibition by divalent cations (WEHNER and HILDEBRAND) **119**, 321
Parapodial musculature:
In the pteropod mollusc *Clione limacina* (SATTERLIE, LABARBERA and SPENCER) **116**, 189
Pattern generation:
During swimming, in *Clione limacina* (SATTERLIE and SPENCER) **116**, 205
Patterning behaviour:
Effects of catecholamines in winter flounder (BURTON) **114**, 649
Peptidergic nerve terminal:
In the crab sinus gland, characterization of (COOKE) **118**, 1
Peptides:
Cardioacceleratory, characteristics of, from *Manduca sexta* (TUBLITZ and TRUMAN) **114**, 365, 381
***Periplaneta americana*:**
Permeability and water content of the integument (MACHIN, LAMPERT and O'DONNELL) **117**, 155; (MACHIN and LAMPERT) **117**, 171
—Actions of nereistoxin on a CNS acetylcholine receptor/ion channel (SATTELLE, HARROW, PELHATE and CALLEC) **118**, 37
Permeability:
Of *Gammarus*, exposed to varying salinity conditions (BOLT) **114**, 673
—And water content of *Periplaneta* integument (MACHIN, LAMPERT and O'DONNELL) **117**, 155; (MACHIN and LAMPERT) **117**, 171

Pexicysts:
Discharge of, by *Didinium nasutum* (HARA, ASAI and NAITOH) **119**, 211
pH:
Intracellular and extracellular in the blue crab, effect of temperature (WOOD and CAMERON) **114**, 151
—Effect on branchial ammonia excretion in trout (WRIGHT and WOOD) **114**, 329
Phonotaxis:
In crickets, effects of temperature (DOHERTY) **114**, 17
Photogrammetry:
Of bat flight (RAYNER and ALDRIDGE) **118**, 247
Photophores:
Oxygen consumption and luminescence of, from a mesopelagic fish (MALLEFET and BAGUET) **118**, 341
Photoreceptor:
Depolarization by acetylcholine in the barnacle (TIMPE and STUART) **117**, 481
—Of the honey bee, recovery from a transient inhibition of oxidative metabolism (DIMITRACOS and TSACOPOULOS) **119**, 165
Phototaxis:
And spectral sensitivity of water mites (DIMOCK and DAVIDS) **119**, 349
Physiology:
Of muscle, history (WILKIE) **115**, 1
—Comparative, of muscle (WEIBEL) **115**, 405
Pigeon:
Magnetic disturbance of homing behaviour (IOALE' and GUIDARINI) **116**, 109
Polyspermy:
In sea urchin oocytes and eggs (DALE) **118**, 85
Position control:
By visual information, in the praying mantis (KIRMSE) **119**, 365
Postsynaptic potentials:
Limited duration, in locust visual neurones (SIMMONS) **117**, 191
Potassium:
Uptake and loss of, by trout in fresh water and sea water (EDDY) **118**, 277
Potassium pump:
In the midgut of *Bombyx mori* larvae (PARENTI, GIORDANA, SACCHI, HANOZET and GUERRITORE) **116**, 69
Potassium transport:
By *Manduca sexta* midgut, measured in an improved short-circuiting chamber (DOW, HARVEY, WOLFERSBERGER and BOYES) **114**, 685
—Regulation of KCl absorption across locust rectum (HANRAHAN and PHILLIPS) **116**, 153
Praying mantis:
Visual position information controls smooth-tracking (KIRMSE) **119**, 365
Pressure:
In buccal and opercular cavities during prey capture by fish (MULLER, VAN LEEUWEN, OSSE and DROST) **119**, 389
Prey capture:
By *Pleurobrachia*, unilateral ciliary reversal and motor responses (TAMM and MOSS) **114**, 443
—Hydrodynamics of, in fish (MULLER, VAN LEEUWEN, OSSE and DROST) **119**, 389
Proprioception:
In insects, responses, cellular properties and reflex action of receptors in the locust metathoracic femoral chordotonal organ (ZILL) **116**, 435, 463
Protein synthesis:
In muscles of eurythermal and stenothermal species of fish during temperature acclimation (LOUGHNA and GOLDSPINK) **118**, 267
Protozoa:
Stentor coeruleus, mechanism of action of tubocurarine on mechanoreceptor channels (WOOD) **117**, 215
Pulmonary receptors:
In the air-breathing organ of the holostean fish, *Amia calva* (MILSOM and JONES) **117**, 389

Ram ventilation:
Energetic consequences and dependence on water oxygen tension (STEFFENSEN) **114**, 141
Recruitment:
Of motoneurones, in control of motor units (DE LUCA) **115**, 125
—Of different muscle fibre types in mammalian muscle, metabolic indicators (ARMSTRONG and LAUGHLIN) **115**, 201
—Of different muscle fibre types in vertebrate muscle, specializations and variations among the vertebrates (JOHNSTON) **115**, 239
Reedfish:
Erpetoichthys calabaricus, oxygen acquisition by (PETTIT and BEITINGER) **114**, 289
Reflex reversal:
Of walking direction in the stick insect (BÄSSLER, FOTH and BREUTEL) **116**, 301
Regulation:
Of potassium chloride absorption across locust rectum (HANRAHAN and PHILLIPS) **116**, 153
Reinnervation:
Influences of inactivity on membrane resting conductances of rat skeletal muscle fibres (CONTE-CAMERINO, BRYANT, LOGRANO and MAMBRINI) **115**, 99
Reptile:
Crocodylus crocodylus, metabolic effects of exhaustive exercise (SEYMOUR, BENNETT and BRADFORD) **118**, 143; (BENNETT, SEYMOUR, BRADFORD and WEBB) **118**, 161
Reset analysis:
Of the gastric mill rhythm in the spiny lobster (RUSSELL) **114**, 71
Respiration:
In the chicken, role of chemoreceptors in control (BARNAS and BURGER) **114**, 121
—Branchial and lung, by the reedfish (PETTIT and BEITINGER) **114**, 289
—Responses of the exercising chicken to spinal cooling (GLEESON, BARNAS and RAUTENBERG) **114**, 427
—Effect of hyperthermia in the chicken (GLEESON) **116**, 487
—In the tropical cockroach, during rest and locomotion (BARTHOLOMEW and LIGHTON) **118**, 449

Respiratory pumping:
Sensory control of, in *Aplysia* (CROLL) **117**, 15
Running:
In mammals, role of compliance (MCMAHON) **115**, 263
—Energetic cost of, effect of limb mass and its distribution (MYERS and STEUDEL) **116**, 363

Safety factors:
And mechanical properties of spider drag-lines (BRANDWOOD) **116**, 141
Salinity:
Effect on urine clearance rates and permeability of *Gammarus* (BOLT) **114**, 673
Salivary glands:
Of pond snails, effects of acetylcholine on extracellular ion concentrations (BARBER and TEN BRUGGENCATE) **118**, 427
***Salmo gairdneri*:**
Transition between branchial pumping and ram ventilation (STEFFENSEN) **114**, 141
—Effects of environmental pH and sodium uptake block on branchial ammonia excretion (WRIGHT and WOOD) **114**, 329
—Effect of perfusion flow rate and adrenergic stimulation on gill oxygen transfer (PERRY, DAXBOECK and DOBSON) **116**, 251
—Renal excretion of magnesium (OIKARI and RANKIN) **117**, 319
—Effect of 'stress' on blood calcium (ANDREASEN) **118**, 111
—Developmental and metabolic constraints on the scope for activity (WIESER) **118**, 133
—Effect of adrenalin on Na^+/H^+ exchange in erythrocytes (COSSINS and RICHARDSON) **118**, 229
—Uptake and loss of potassium in fresh and salt water (EDDY) **118**, 277
—Mechanical properties of the myotomal musculo-skeletal system of rainbow trout (JOHNSRUDE and WEBB) **119**, 71
Salmon:
Sodium balance on entry into fresh water (POTTS, TALBOT and EDDY) **118**, 455
Sarcomeres:
Non-uniformity within whole muscles (MORGAN) **115**, 69
***Schistocerca americana*:**
Effect of temperature on mechanosensory neurones (MILES) **116**, 121
***Schistocerca gregaria*:**
Developmental determination of central connections of sensory neurones from wind-sensitive hairs (BACON and ANDERSON) **114**, 679
—Structural variability of an identified interneurone (SATTERLIE) **114**, 691
—Development of the jumping mechanism (GABRIEL) **118**, 313, 327
Scope for activity:
Developmental and metabolic constraints in young rainbow trout (WIESER) **118**, 133
***Scyliorhinus canicula*:**
Frequency selectivity in the ampullary system (PETERS and EVERS) **118**, 99
Sea urchin:
Sperm receptivity in oocytes and eggs (DALE) **118**, 85
Seasonal performance:
Of the heart of a marine teleost (GRAHAM and FARRELL) **118**, 287
Sensory neurones:
Developmental determination of central connections from wind-sensitive hairs in the locust (BACON and ANDERSON) **114**, 679
***Sepia officinalis*:**
Mechanoreceptors in the fins (KIER, MESSENGER and MIYAN) **119**, 369
Serotonin:
In the control of salivation in the blowfly (TRIMMER) **114**, 307
—As a modulator of the central pattern generator in the isolated lamprey spinal cord (HARRIS-WARRICK and COHEN) **116**, 27
Sexual dimorphism:
Of electric organ discharge patterns in *Eigenmannia* (KRAMER) **119**, 41
Shortening velocity:
Of holothurian muscle, effect of tonicity changes (TSUCHIYA) **119**, 31
Silk:
Of spiders' webs, viscoelastic behaviour and wet supercontraction (WORK) **118**, 379
Silkworm:
Water transport across the midgut (ZERAHN) **116**, 481
Size principle:
In the recruitment of motoneurones (HENNEMAN) **115**, 105
Skeletal muscle:
From antarctic fish, contractile and metabolic characteristics of (JOHNSTON and HARRISON) **116**, 223
Skin:
Regulatory contribution during hypercapnia in *Bufo marinus* (TUFTS and TOEWS) **119**, 199
Slug:
Response to progressive dehydration (HESS and PRIOR) **116**, 323
—Effect of dehydration on feeding and its neural correlate (PHIFER and PRIOR) **118**, 405
—Stimulation of activity in *Arion ater* by falling temperature (DAINTON and WRIGHT) **118**, 439
—Role of angiotensin II in initiation of contract-rehydration (MAKRA and PRIOR) **119**, 385
Smooth-tracking:
Controlled by visual information in the praying mantis (KIRMSE) **119**, 365
Sodium dependence:
Of fluid secretion by dragonfly Malpighian tubules (NICHOLLS) **116**, 53
Sodium flux:
Across the integument of a euryhaline, hyperosmotic regulator (TAYLOR) **114**, 477
Sodium regulation:
In fresh-run Atlantic salmon, *Salmo salar* (POTTS, TALBOT and EDDY) **118**, 455

Sodium transport:
By carp intestinal epithelium, temperature acclimation of (GIBSON, ELLORY and COSSINS) **114**, 355
Sound:
Analysis, by teleosts, of the phase difference between particle motion components (VAN DEN BERG) **119**, 183
Space perception:
And attack behaviour of the Australian bulldog ant (ERIKSSON) **119**, 115
Spectral sensitivity:
And photobehaviour of water mites (DIMOCK and DAVIDS) **119**, 349
Spermatozoa:
From hamster, a quantitative description of flagellar movement (ISHIJIMA and MOHRI) **114**, 463
—Receptivity in sea urchin oocytes and eggs (DALE) **118**, 85
Spider:
Mechanical properties and factors of safety of drag-lines of *Meta segmentata* (BRANDWOOD) **116**, 141
—Viscoelastic behaviour and wet supercontraction of web (WORK) **118**, 379
—Visual field of the eyes of primitive jumping spiders (LAND) **119**, 381
Statocyst:
Role in the angular acceleration receptor system of the octopus (WILLIAMSON) **119**, 251
Statocyst interneurones:
Role in steering behaviour of crayfish (TAKAHATA, YOSHINO and HISADA) **114**, 599
Stick insects:
Influence of coxa-thorax joint receptors on retractor motor output during walking in *Carausius morosus* (GRAHAM) **114**, 131
—Physiology of the femoral chordotonal organ in *Cuniculina impigra* (HOFMANN, KOCH and BÄSSLER) **114**, 207
—Acceleration receptors in the femoral chordotonal organ in *Cuniculina impigra* (HOFMANN and KOCH) **114**, 225
—Coactivating influences between neighbouring legs in walking (CRUSE) **114**, 513
—Inherent walking direction of pro- and metathoracic legs (BÄSSLER, FOTH and BREUTEL) **116**, 301
—Control of leg movements in walking (CRUSE) **116**, 343, 357
—Behaviour and motor output for walking on a slippery surface (GRAHAM and EPSTEIN) **118**, 287
Stimulus-response coupling:
Role of inositol phosphates (HESLOP, IRVINE, TASHJIAN and BERRIDGE) **119**, 395
Stomatogastric rhythm:
In the spiny lobster, pattern and reset analysis (RUSSELL) **114**, 71
—In the spiny lobster, neural basis of teeth coordination (RUSSELL) **114**, 99
Strain gauge:
Used to measure mesokinetic movement in a lizard (SMITH and HYLANDER) **114**, 53
Strand receptors:
Associated with the femoral chordotonal organs of locust legs (BRÄUNIG) **116**, 331
Stress:
Effect on urea efflux from dogfish pup (EVANS and KORMANIK) **119**, 375
Stridulation:
In crickets, effects of temperature (DOHERTY) **114**, 17
Structural variability:
Of an identified interneurone from a population of wild locusts (SATTERLIE) **114**, 691
Supercontraction:
Of wet ampullate fibres of spider's web (WORK) **118**, 379
Surface charge:
Of skeletal muscle fibres from green sunfish, effect of temperature acclimation (KLEIN) **114**, 581
Swimmeret:
In crayfish, motor programme switching during rhythmic activity (HEITLER) **114**, 521
Swimming:
Habituation of activity in the leech (DEBSKI and FRIESEN) **116**, 169
—In *Clione limacina* (SATTERLIE, LABARBERA and SPENCER) **116**, 189; (SATTERLIE and SPENCER) **116**, 205
—Neural basis of escape behaviour in the squat lobster (SILLAR and HEITLER) **117**, 251, 271, 291
—Escape behaviour of the crayfish, role of the appendages (COOKE and MACMILLAN) **118**, 351; (COOKE) **118**, 367
—Kinematics of, in tadpoles (WASSERSUG and VON SECKENDORF HOFF) **119**, 1
—Mechanical properties of the myotomal musculoskeletal system of rainbow trout (JOHNSRUDE and WEBB) **119**, 71
—Cost of locomotion in medusae (DANIEL) **119**, 149
—Differences between the upstroke and downstroke in dolphins (VIDELER and KAMERMANS) **119**, 265
Swing phase:
Of stick insect walking, initiation of (CRUSE) **116**, 357

Tadpole:
Kinematics of swimming (WASSERSUG and VON SECKENDORF HOFF) **119**, 1
Take-off:
In pigeons, importance of leg thrust (HEPPNER and ANDERSON) **114**, 285
Teleost fish:
Contractile and metabolic characteristics of muscle fibres from antarctic fish (JOHNSTON and HARRISON) **116**, 223
—Protective effect of adrenalin on the heart in acidosis (FARRELL) **116**, 503
—Size, composition and acid-base response to hypercapnia of the bone compartment (CAMERON) **117**, 307
—Nervous control of blood pressure in *Gadus morhua* (SMITH, NILSSON, WAHLQVIST and ERIKSSON) **117**, 335

—Avoidance of ocular freezing in antarctic species (TURNER, SCHRAG and DEVRIES) **118**, 121
—Seasonal intrinsic cardiac performance in *Hemitripterus americanus* (GRAHAM and FARRELL) **118**, 173
—Hearing physiology of (VAN DEN BERG) **119**, 183
—Evidence for a Ca^{2+}-ATPpase in membrane preparations from the gill epithelium of *Oreochromis mossambicus* (FLIK, VAN RIJS and WENDELAAR BONGA) **119**, 335
Temperature:
Effect on cricket acoustic communication system (DOHERTY) **114**, 17
—Effect on respiratory physiology of the turtle (GLASS, BOUTILIER and HEISLER) **114**, 37
—Effect on intracellular and extracellular acid-base regulation in the blue crab (WOOD and CAMERON) **114**, 151
—Effect on mechanosensory neurones in the grasshopper (MILES) **116**, 121
—Effect on oculomotor function in antarctic and temperate fish (MONTGOMERY and MACDONALD) **117**, 181
—Modifications to a cabinet to gain proportional control (HAGAN and COOK) **118**, 423
—Falling, stimulates slug activity (DAINTON and WRIGHT) **118**, 439
Temperature acclimation:
Of intestinal sodium transport in the carp (GIBSON, ELLORY and COSSINS) **114**, 355
—Effect on resting membrane of skeletal muscle fibres from green sunfish (KLEIN and PROSSER) **114**, 363
—Effect on chloride conductance of muscle fibres from green sunfish (KLEIN) **114**, 581
—Of vertebrate skeletal muscle (BENNETT) **115**, 333
—Influence on transient currents in an identified snail neurone (ZEČEVIĆ, LEVITAN and PAŠIĆ) **117**, 369
—Of eurythermal and stenothermal species of fish, effect on rate of muscle protein synthesis (LOUGHNA and GOLDSPINK) **118**, 267
—Effect on force-velocity characteristics and muscle metabolism in carp (JOHNSTON, SIDELL and DRIEDZIC) **119**, 239
Temperature regulation:
Of honey bees in the Sonoran desert (COOPER, SCHAFFER and BUCHMANN) **114**, 1
—Respiratory and cardiovascular responses of the exercising chicken to spinal cooling (BARNAS, GLEESON and RAUTENBERG) **114**, 415; (GLEESON, BARNAS and RAUTENBERG) **114**, 427
—During flight, by flying foxes (CARPENTER) **114**, 619
Threshold:
For vision in the shore crab (DOUJAK) **116**, 385
Thyrotropin releasing hormone (TRH):
Generation of novel inositol phosphates (HESLOP, IRVINE, TASHJIAN and BERRIDGE) **119**, 395
Tonicity:
Effect on maximum shortening velocity of holothurian muscle (TSUCHIYA) **119**, 31
Touch sensitivity:
Of crickets, pathways for afferent information (HUSTERT) **118**, 209
Toxicysts:
Discharge of, by *Didinium nasutum* (HARA, ASAI and NAITOH) **119**, 211
Training:
Metabolic consequences of in mammalian muscle (GOLLNICK, RIEDY, QUINTINSKIE and BERTOCCI) **114**, 191
—Effect on metabolic and circulatory limitations to $\dot{V}_{O_2}max$ (DI PRAMPERO) **115**, 319
—For maximizing muscle power output (HOWALD) **115**, 365
—Effect on muscle power, a comparative approach (GOLDSPINK) **115**, 375
—Effect on running energetics of male and female domestic fowl (BRACKENBURY and EL-SAYED) **117**, 349
Transplantation:
Of epidermis during postembryonic development in the locust (BACON and ANDERSON) **114**, 679
T-system:
Role in excitation-contraction coupling in skeletal muscle (PEACHEY) **115**, 91
Tuning:
Role of tympanal membranes in insect auditory receptors (OLDFIELD) **116**, 493
Turtle:
Temperature dependence of respiratory physiology of *Chrysemis picta bellii* (GLASS, BOUTILIER and HEISLER) **114**, 37
—Ventilatory and acid-base responses to long-term hypercapnia (SILVER and JACKSON) **114**, 661
—Partitioning of body fluids and cardiovascular responses to haemorrhage (SMITS and KOZUBOWSKI) **116**, 237
Tymbal muscle:
In the cicada, a synchronous muscle with an operating frequency greater than 500 Hz (JOSEPHSON and YOUNG) **118**, 185
Tympana:
Role in tuning of insect auditory receptors (OLDFIELD) **116**, 493

Ultrastructure:
Of muscle, implications for the crossbridge mechanism of muscular contraction (HUXLEY) **115**, 17
—Of mammalian muscle, adaptability (EISENBERG) **115**, 55
***Unionicola*:**
Spectral sensitivity and photo-behaviour (DIMOCK and DAVIDS) **119**, 349
Urea:
Efflux from *Squalus acanthias* pup under stress (EVANS and KORMANIK) **119**, 375
Urine:
Clearance rates in *Gammarus* exposed to varying salinity conditions (BOLT) **114**, 673

Velocity servomechanism:
In the control of walking in the stick insect (CRUSE) **116**, 343
Velocity transients:
Role in muscle mechanics (CAVAGNA, MAZZANTI, HEGLUND and CITTERIO) **115**, 79
Ventilation:
Branchial and lung, of the reedfish (PETIT and BEITINGER) **114**, 281
—In the freshwater turtle, response to long-term hypercapnia (SILVER and JACKSON) **114**, 661
—Pressure differences during the cycle, in *Octopus* (WELLS and SMITH) **116**, 375
—Pattern in the chicken, effect of hyperthermia (GLEESON) **116**, 487
—Effect of cold exposure in the pigeon (BECH, RAUTENBERG and MAY) **116**, 499
—Interaction with circulation, in the land crab (BURGGREN, PINDER, MCMAHON, WHEATLY and DOYLE) **117**, 133
—Vagal control, in the dogfish (BARRETT and TAYLOR) **117**, 433, 449, 459
—And oxygen uptake by *Nautilus* (WELLS and WELLS) **118**, 297
—Effect of acute hypoxia in *Octopus* (WELLS and WELLS) **118**, 445
—During rest and locomotion in *Blaberus giganteus* (BARTHOLOMEW and LIGHTON) **118**, 449
Verapamil:
Effect on calcium action potentials in developing insect oocytes (O'DONNELL) **119**, 287
Viscoelasticity:
Of octopus aorta (SHADWICK and GOSLINE) **114**, 259
Vision:
In the shore crab (DOUJAK) **116**, 385
—Binocular interaction during the optokinetic response of a crab (NALBACH, THIER and VARJÚ) **119**, 103
—Attack behaviour and distance perception in the Australian bulldog ant (ERIKSSON) **119**, 115
Visual field:
Of the eyes of primitive jumping spiders (LAND) **119**, 381
Vocalizations:
Energetic efficiency of, by the frog (RYAN) **116**, 47
Voltage-clamp:
To investigate the effects of temperature acclimation on transient currents in a snail neurone (ZEČEVIĆ, LEVITAN and PAŠIĆ) **117**, 369
$\dot{V}_{O_2}$max:
Effect of training on limitations to (DI PRAMPERO) **115**, 319
—Value under limiting conditions in working skeletal muscle (HOPPELER and LINDSTEDT) **115**, 355

Walking:
In stick insects, role of coxa-thorax joint receptors (GRAHAM) **114**, 131
—In stick insects, coactivating influences between neighbouring legs (CRUSE) **114**, 513
—Inherent direction of, in pro- and metathoracic legs of the stick insect (BÄSSLER, FOTH and BREUTEL) **116**, 301
—Control of stick insect leg movements (CRUSE) **116**, 343, 357
—Backward, by a stick insect on a slippery surface (GRAHAM and EPSTEIN) **118**, 287
Wandering behaviour:
Endocrine control of, in *Manduca sexta* larvae (DOMINICK and TRUMAN) **117**, 45
Water content:
And permeability of *Periplaneta* integument (MACHIN, LAMPERT and O'DONNELL) **117**, 151; (MACHIN and LAMPERT) **117**, 171
Water transport:
Across the midgut of a silkworm (ZERAHN) **116**, 481
Work:
Output from insect striated muscle during cyclic contraction (JOSEPHSON) **114**, 493
—Fuels and metabolic pathways as designed systems for (HOCHACHKA) **115**, 149
—Functional limitations to, in human muscle (SALTIN) **115**, 345
—Output of muscles from different species (WEIBEL) **115**, 405
—Capacity of male and female domestic fowl compared (BRACKENBURY and EL-SAYED) **117**, 349
—Production, by insect wing muscles during flight and singing (JOSEPHSON) **117**, 357

Xanthophores:
In winter flounder, sensitivity to catecholamines (BURTON) **114**, 649